Medical Times

A Monthly Journal of Medicine, Surgery, and the Collateral Sciences

Vol. XLIII., No. 1 NEW YORK, JANUARY, 1915 Fifteen Cents a Copy One Dollar a Year

A Review of the Advance of Medicine in 1914

A REVIEW OF SURGERY IN 1914.

F. D. GRAY, M.D., F.A.C.S.,
Jersey City, N. J.

It is obvious that any attempt to cover this field in a single paper must be incomplete, and furthermore, that a considerable part of the matter presented can not of necessity be strictly confined to the activities of the one year. More or less of the subject matter must deal with topics that have occupied the surgical mind prior to 1914, and have only born fruit within that period. Others will present different aspects or developments of questions that have been already under discussion. With these premises the writer will endeavor to present various matters of surgical importance that have appeared in the literature of the year within the limits of reasonable space, and without any especial attempt at grouping of the material presented.

An interesting paper on Pneumatic Rupture of the Bowel appears by Bendixen and Blything[1] in which it is shown that not infrequently an explosion of the intestine is due to the entrance of compressed air owing to the proximity of the nozzle of the compressed air hose to the anus. This is sometimes the result of accident, but occasionally is part of a practical joke among workmen. In all the reported cases the air under pressure had to pass through one or more layers of clothing and in some cases the nozzle was at least several inches from the surface of the body. The authors are convinced that a solid column of air under pressure of 100 to 125 pounds would act at a distance of several inches almost like a solid body forcing open the sphincter muscles. The only cases of this injury previously reported were those by Andrews[2]—one subsequent case having been reported by McCrea of New Jersey. The sigmoid is affected in nearly all cases, but the whole colon, together with the small intestine, may show signs of traumatic injury due to compressed air applied through the rectum. Air is usually found in the free peritoneal cavity with ensuing tympanitis and occasional emphysema of the tissues. The symptom complex is that of "acute abdomen" and calls for immediate operative interference. Cases not operated on show a recovery of only 8.6 per cent.

Bloodgood[3] submits a forcible and consistent plea for the early "Diagnosis and Treatment of Border-line pathological lesions." He emphasizes the fact of the recent increase in number of these border-line cases presenting themselves with the conclusion that patients so suffering are learning to seek assistance sooner than formerly—saying that in the past two years he has seen more Border-line Breast Lesions than in the previous twenty. The article deals with breast tumors, hemangioma, fibro-angioma, intermuscular angioma, granulation tissue tumors, angiosarcoma, keloids, etc., the entire argument impressing the importance of early and active diagnosis with immediate operative removal in the malignant type. No abstract can fairly reproduce the important points made.

The conclusions of Leonard[4] in an article "On the Post-operative Results of Trachelorraphy in comparison with those of Amputation of the Cervix," are:

1. The presence of a marked endocervicitis should be considered as a contra indication to the performance of trachelorraphy.

2. Although serious post-operative hemorrhage is not infrequent after amputation of the cervix (5 per cent.), this accident is very uncommon after trachelorraphy.

3. The influence of trachelorraphy in improving the general condition is, in properly selected cases, quite as marked as that of amputation of the cervix. In each instance about 90 per cent. of the patients report improvement in their general health.

4. Although trachelorraphy may render a mild endocervecitis more amenable to treatment, it can not be considered, like amputation of the cervix, as a curative measure for this condition.

5. Laceration of the cervix is a frequent cause of dysmenorrhea in multiparæ and its removal by either amputation of the cervix or trachelorraphy is followed by the disappearance or amelioration of menstrual pain in over 60 per cent. of cases.

6. Fertility is much more likely to follow trachelorraphy than amputation of the cervix.

7. After amputation of the cervix the incidence of abortion and premature delivery is greatly increased, while trachelorraphy has no effect upon the course of subsequent pregnancy.

8. Labor after amputation of the cervix is usually difficult, while after trachelorraphy it is almost always normal.

9. Amputation of the cervix is an operation to be avoided in women in the child-bearing period until all other therapeutic means have been exhausted.

10. Trachelorraphy has a therapeutic efficiency, in properly selected cases, quite as high as amputation of the cervix, and, having no influence upon the subsequent marital history, is the operation of choice for women in the child-bearing period. The entire article is so rational and statistical that it will well repay a careful reading.

Babcock[5] calls attention to a simple and practical method of recognizing the ureter during abdominal and pelvic operations. This has to do with the periodic, peristaltic movements of the ureter, differing materially from intestinal peristalsis. This movement can easily be seen, he says, through the overlying peritoneum. During the peristaltic wave the calibre of the tube is not only diminished, but the ureter, marked by the attached vessels, may be seen to slide upward and then, after a momentary pause, downward under the peritoneum. The movements are quite rapid, cover several milometers and are succeeded by a fairly long interval. In one recent patient he found the interval to be 28 sec. On stroking the ureter it became 12 sec. There is no other columnar or tubular structure in the body, that shows this particular type of peristaltic movement. It suggests the intermittent sliding of valve rods seen on steam vessels.

Horsley,[6] in an article on "Surgical Repair of Blood Vessels, etc.," makes very plain the fundamental requirements of vascular repair. He insists that success depends upon approximation of the endothelial surfaces by an eversion of the vessel ends so as to bring endothelium in contact with endothelium on the same principle by which we *invert* divided intestinal ends so as to bring serosa in contact with serosa—endothelium in the blood vessels corresponding to serosa upon the intestines. He calls attention to the fact that the usual method of suturing blood vessels, consisting in first placing three guy sutures and then whipping the edging of the vessels together by an overhand stitch does not accomplish endothelial approximation as accurately as would a mattress stitch which turns out a flange and compels the apposition of the intima. All this is facilitated by the use of his "arterial suture staff," to which the three guy sutures are attached, making the circumference of the vessel triangular and everting the intima by the tension of the spring of the suture staff. Furthermore, he emphasizes the importance of leaving as little exposed thread as possible in the vessel lumen, as such foreign body encourages excessive formation of coagula, while all that is necessary is sufficient clot formation to fill the needle punctures in the vessel walls. A careful perusal of this technical article with its excellent illustrations is well worth while.

Lewis,[7] in a "Preliminary Report of Experimental Work in Bone Transplantation," reaches the following conclusions:

1. That cortical bone, free of its periostium, endostium, and marrow will retain its vitality and proliferative powers when subdivided into small fragments and replaced in the tissues. Also that contact with living bone is unnecessary for the growth of these transplants.

2. That larger pieces of bone may be transplanted and remain alive—not being merely grown into by the bone with which they may come in contact.

3. That bones may unite after fracture or a space fill in after resection without the aid of any periostal or or bony bridge, and that transplanted fascia may be made to take up the nutritional and limiting functions of the periostium. The matter of the survival of a transplanted epiphyseal cartilage can not be said to have been proven, but he suggests the value of additional careful experiment.

Kerr[8] presents a comprehensive and thoroughly illustrated paper on "Operative Treatment for Malformations of Uterus and Vagina." He bases the etiology upon four fundamental foetal defects:

A. Where fusion of the Mulerian ducts has occurred but development of the uterus has been arrested.

B. Where the Mullerian ducts are fused but the two halves are divided by a more or less complete septum.

C. Where the two Mullerian ducts are more or less imperfectly fused.

D. Where the deformity affects the vagina especially.

He considers the first class—infantile uterus—the simplest of all malformations and has never been able to secure a satisfactory menstruation nor see a pregnancy occur. The extreme dysmenorrhea frequently associated with the condition and which in former years led surgeons to remove the ovaries he believes should be dealt with by hysterectomy. In the more extreme variety such as *uterus foetalis* he has occasionally found it unaccompanied by dysmenorrhea or menstrual discharge. It has occurred in women of specially good physique as well as those small and ill developed. Nothing can be done for such cases except total hysterectomy when dysmenorrhea is so extreme as to affect the general comfort and health of the individual. In one or two cases of the most pronounced form of uterine deformity—*uterus rudimentarius*—he has found well developed testicles instead of ovaries and yet the individual appeared to be a well developed woman, a fact that is peculiarly interesting in connection with the internal secretions and their influence upon the growth and development of the individual.

Cases of atresia cervicalis without menstrual accumulation or periodic uterine contraction require no surgical treatment but in cases of haematometra some plastic operation on the cervix may cause relief of the periodic pain by allowing a free escape of menstrual blood. Regarding atresia either at the external or internal os or involving the entire cervical canal, the author, while admitting that some cases where the occlusion is by a thin membrane may be dealt with by puncture from below followed by dilatation, believes that in cases where the occlusion involves considerable thickness of tissue, it is better to open the abdomen from above, separate the bladder from the rudimentary cervix and either perform a hysterectomy or resect the occluded portion and anastomose the proximal and distal portions. His technic for suprapubic resections of the uterus to meet these conditions of malformation can only be thoroughly comprehended by a careful reading of the text and study of the excellent illustrations.

Birnie[9] proposes a method of exposing the pelvic portion of the ureter which, so far as he knows, is new and original.

With the patient in the Trendelenburg position, median incision is made beginning close to the pubis and extending upward, exposing the space of retzius in the usual manner. No muscle fibres are cut but the recti are retracted to either side. The point where the parietal peritoneum is reflected on to the bladder is noted and care not to open the peritoneal cavity. Start-

ing at the bladder the peritoneum is wiped away toward the median line separating it from the bladder and pelvic wall, thus exposing the ureter. With retraction one gets a complete exposure of the ureter and any necessary procedures may be carried out under the guidance of the eye. Drainage, if necessary, may be instituted through the original incision or through a separate stab wound.

In an article on "The Operation of Gastrojejunostomy and the Principles Which Should Determine its Use," Paterson[10] offers some convincing arguments in proof of the theory that this operation proves beneficial on physiologic grounds rather than as a drainage procedure, its physiologic importance being due to the admixture, through the stoma, of bile with the gastric contents. He offers proof that improvement occurs in cases where the radiograph shows the stomach contents are retarded instead of accelerated after operation, which could hardly be the case if improvement were to be looked for as result of mechanical drainage. This is not a new proposition of the author, as he has for several years advocated the physiologic theory on the ground of its reducing the total acidity of stomach contents by the admixture of bile, but it shows his continued belief in the light of further experience. The author, of course, admits the importance of the short-circuiting operation as a matter of drainage in cases of more or less complete occlusion of the pylorus, where a new outlet of the stomach is so evidently needed, but in cases of patent pylorus where the food continues to pass either wholly or partly by that route he fails to see any *raison d'ete* except on the physiologic hypothesis. He also has some favorable things to say about the anterior anastomosis as contrasted with the posterior (which has so largely displaced the former of late years) among which, aside from its technical facility, is the possibility of establishing it nearer to the pylorus.

Paterson's conclusions are, first, that the type of gastrojejunostomy employed is of less importance than the manner in which it is performed. Second, that occlusion of the pylorus is an unnecessary complication of the operation and is based on erroneous pathology. Third, that if gastrojejunostomy be a physiological operation, its use for the treatment of gastric hemorrhage is correct and explicable, as he believes that usually the hemorrhage comes, not from the ulcer, but from erosion of the gastric mucosa secondary either to hypersecretion or hyperacidity. Fourth, that if gastrojejunostomy by a physiologic operation, then it is as efficient treatment for ulcers of the body of the stomach as for those near the pylorus; in other words, gastrojejunostomy is preferable to excision.

Crile[11] in reviewing the records of eight hundred and thirty-two operations on the biliary tract performed at the Lakeside Hospital, draws some interesting conclusions on the indications for cholecystostomy and cholecystectomy. He finds that cholecystostomy too frequently presents a history of an apparent initial cure followed after a time by pain and fever with opening of a biliary fistula in the incision. After a time this closes and eventually the cycle repeats itself with the end result of a cholecystectomy which uniformly gives relief. He mentions the following conditions which point to the probability of such a cholecystitis obstruction cycle. If the mucous membrane of the gall bladder be gangrenous; if there be a stone imbedded by ulceration in a cystic duct; if the wall of the gall bladder be thickened by scar tissue, and if there be no bile in the gall bladder, these conditions will be followed by recurrent obstructions and infection after cholecystostomy. On the other hand, if the gall bladder have approximately normal walls, and if the cystic duct be approximately normal, then, no matter what the size or the number of stones, if the operation be performed with gentle manipulation so as to avoid any unnecessary trauma, there will be no post-operative pathologic cycle.

He states that the clinical results of cholecystectomy in many cases of pathologic gall bladder are as much better than cholecystostomy as nephrectomy of a pus-riddled kidney is better than a nephrotomy. In commenting on the adverse results of certain common duct operations he lays stress upon the disturbance of innervation by careless dissection of the nerves which supply the liver and approach it along the common duct. The liver, he says, performs its function partly through hormone action and partly through direct innervation. If the innervation be disturbed by unnecessary trauma along the common duct, liver function is suppressed and a seemingly inexplicable fatality results from failure of liver function. His conclusions are:

1. Considering all the later consequences of infection, cholecystectomy in the type of cases indicated shows less morbidity than cholecystostomy. In these cases the clinical end-results of cholecystectomy are good, while in unsuitable cases cholecystostomy is followed by recurrent cholecystitis.

2. I have seen no adverse effects from cholecystectomy, provided that the division is made at the beginning of the cystic duct; that no gall bladder tissue is left, and that the division does not at all encroach on the common-duct. This technic can be readily carried out.

3. If acute infection be present, then in most cases cholecystostomy should be first performed, followed if required by a later cholecystectomy.

4. If the gall bladder and the cystic duct be approximately normal, then the gall bladder should be left, cholecystostomy being the operation of choice. If the gall bladder be thick, contains much scar tissue, be shrunken, show chronic infection of the wall, if the cystic duct be partially or completely strictured, or if a stone be impacted in the duct, then cholecystectomy should be performed.

5. All gall bladder operations, and especially common-duct operations, may be performed with a minimum shock and discomfort by thorough nerve blocking with novocain, by sharp dissection, and gentle manipulation.

6. The principal causes of the higher mortality in common-duct operations are the damage done to the nerve supply of the liver and the loss of bile salts. The sharp knife dissection and the clean-cut ample incision into the common-duct, with the consequent minimum nerve injury to the duct and its neighborhood, and in suitable cases, the immediate closure of the common-duct by suture, will immensely improve the morbidity and the mortality following common-duct operations.

7. The mortality rate recorded in the 832 records studied for the purposes of this paper was 7 4/5 per cent. This mortality rate, as well as the post-operative morbidity will be decreased by the application of the technical procedures described here.

Among other interesting observations by Blair[12] in an article on "Dental Disorders and Peridental Infections," are the following:

A destruction of the peridental membrane, "pyorrhea alveolarius," of all the teeth to a depth of one-eighth inch from the gingival border will leave an exposed chronically suppurating surface of from two and one-

half to three square inches, from which not only are toxines absorbed by the granulations, but most of the exuding pus is swallowed; however, pyorrhea alveolarius in an advanced form is not a common affection and is limited almost exclusively to adult life, while dental caries is the most common affliction of civilized races, hardly five per cent. being exempt. Being common in the youngest children, it exposes their tissues to direct and continuous infection, while their acquired immunities are nil or very feeble.

Engmen was about the first in this country to point out the relation between dental affections and certain mucous and ski nlesions—some by direct infection, others through reflex nerve irritations.

In ninety-four cases of tic douloureux which he examined, the origin of the pain seems to have been definitely related to a dental or peridental irritation in twenty-six. Of the nervous, mental, psychic disturbances that have been found to be dependent upon dental disorders, much convincing evidence has been put forth in specific instances; as Troemmer puts it, all disturbances of the peripheral and central nervous system must be included in considering the neurology of the teeth. Skiagraphic study of the teeth in three hundred and fifty neurologic patients with dental disease convinced Upson that in many of them the dental disease was causal rather than casual, and he observed that in fifty-eight cases of mental derangement thirty had impacted teeth and that in twenty-two of twenty-eight cases of mental derangement operated upon, definite improvement took place within two weeks. Upson cites two cases of irritability and backwardness at school and of defective mentality cured by dental operations, while Esquirel described three cases of insanity cured by dental treatment.

Bowman,[13] in an article on Haemastasis, makes some valuable suggestions with regard to the control of hemorrhage in parenchymatous organs, such as the brain, liver, spleen, kidney, &c., by the use of living attached or detached tissues, including muscle, fascia, ementum, &c. As to the rationale of this method some argue that it is a chemical action and others that it is mechanical, the chances being about even that both methods play a part. In the control of hemorrhage from wounds in these parenchymatous organs the older methods consisting of gauze tampons, ligatures, and deep sutures are objectionable on account of the degeneration and necrosis of parenchymatous elements which they produce. Waljoschke and Lebedew made various wounds in the kidneys, liver and spleen of dogs, and controlled the subsequent hemorrhage with transplanted pieces of superficial fascia held in place with superficial sutures. They also resected parts of organs and sutured layers of fascia over the raw surfaces. In penetrating injuries the wound canal was tamponed with fascia. After certain periods of time the animals were killed and the specimens examined microscopically. Their conclusions are as follows:

1. The fascia transplanted on the bleeding surface of an organ acts as a "living tampon," which controls active bleeding and prevents subsequent hemorrhage.

2. The free transplantation of fascia simplifies the laying of sutures and avoids the use of deep sutures, which would include and compress tissue and are known to cause a certain amount of necrosis of parenchyma.

3. Fascia is a excellent material to use for this purpose, in that it does not act as an irritant to an organ which is in itself capable of developing connective tissue.

4. Fascia acts in a way similar to the normal capsule of an organ and, as the pressure exerted is so slight, no atrophy of the gland is produced.

5. A ruptured kidney treated by this method heals perfectly and functionates normally.

6. The substitution of a removed kidney capsule with a sheet of superficial fascia prevents the formation of a secondary scar tissue capsule which would cause a contraction of the whole organ. Bowman adds that among the most valuable of all hemostatic agents in cranial operations are small cotton pledgets wrung out of hot salt solution. These are laid on the various oozing points and hasten coagulation. Mention is also made of the value of pieces of muscle in the control of troublesome bleeding.

Percy[14] reviews the treatment of inoperable carcinoma of the uterus by application of heat. He discusses the fundamental therapeutic principle that to be effective, heat shall be of such a character and degree as to destroy or at least markedly inhibit the growth of malignant cells without damaging the normal tissue cells around and beyond them. He shows that it is not necessary to carbonize cancer cells, but that, in fact, such carbonization prevents the desired result. He also shows the limitations of application of hot water, fulguration, electro-coagulation, hot air, steam, etc., because of their slight penetration. He prefers his original method by the development of heat through an electric heating iron, which can be perfectly regulated by means of a rheostat when applied to the involved tissue. With this instrument, a water-cooled speculum and an adaptable vaginal dilater, a maximum penetration, a penetration and dissemination of heat is obtained. The heating iron when used through the water-cooled speculum should not be hot enough to scorch a pledget of white cotton if laid on the heating iron for even half an hour. No smoke or smell of burning tissues should issue from the speculum, as would occur if they were being carbonized. In other words, the process brings about a slow disintegration of the malignant cells, but does not injure the normal surrounding tissues. The author states that he is working out a method by which the amount of heat entering both the pathologic and normal tissues can be accurately gauged, which will make it more definitely and accurately certain that the required temperature known to destroy cancer cells is entering the parts involved. The only drawback which this method has shown in fifty cases has been the occurrence twice of secondary hemorrhage.

Balfour,[15] assuming that it is at least accepted as logical that the ideal procedure in our present conception of the "surgical treatment" of gastric ulcer should be the removal of the ulcer, proposes as a substitute for excision the burning out of the ulcer by means of the actual cautery. After a brief discussion and illustration of the technique as it has been employed in the male clinic, he concludes as follows:

1. The ulcer is destroyed and with it any early malignancy which may exist.

2. There is little sacrince of sound gastric tissue, and secondary contraction is therefore minimized.

3. Hemorrhage, early or late, is with practical certainty, prevented.

4. Its simplicity, speed of accomplishment and safety recommend it.

Claybrook[16] recalls attention to "A New Diagnostic Sign in Injuries of the Abdominal Viscera," which he mentioned previously in 1904, and which he says that subsequent careful observation has convinced him is of

decided value. It consists in the transmission of the heart and respiratory sounds so that they could be heard all over the abdomen almost as well as over the chest and he appeals to the profession to bear this diagnostic element in mind so as to determine by a large series of cases how much dependence may be placed upon it as a negative as well as positive sign of internal injuries in a class of cases which is admittedly of frequent doubt as to diagnosis. He asserts that he has found the sign present in cases of ruptured mesentery with hemorrhage, ruptured spleen, ruptured bowel, ruptured liver, ruptured tubal pregnancy, and immediately after rupture of an appendix. Also, that it should be present in ruptured gastric and duodenal ulcer as well as in cases of typhoid perforation. Further, it should be of value in differentiating ruptured gastric and duodenal ulcer from unruptured appendicitis, as it will appear at once in these cases and not in appendicitis until rupture has occurred. It is not present in post-operative cases. In one case with a history of a squeeze through the hips and abdomen and with catheter showing small amount of bloody urine, the sign was not present. The history and findings, however, led him to open the abdomen and no intraperitoneal trouble was found, showing, so far as one case may, that the sign has negative as well as positive value. It is present soon after the reception of an injury, having been noted as early as a half-hour thereafter. It continues in unoperated cases as long as twenty-four hours after traumatism and may last for days. Claybrook's theory of the mechanism leading to this sign is irritation of the parietal peritoneum by the sudden outpouring of foreign material, as bowel content, blood and urine, into the abdominal cavity. In his opinion it is never present in cases of extra peritoneal rupture of the bladder or in injuries of the abdominal wall unaccompanied by internal injury.

Finney and Friedenwald[17] submit a study of one hundred cases upon whom the operation of pyloroplasty (Finney) have been performed during the past twelve years—the life-time of this particular procedure.

In addition to the renewal of the description in detail, with excellent illustrations, and numerous statistical tables, the following conclusions are drawn:

1. The operation has its greatest indication in the relief of pyloric stenosis due to chronic ulcers, situated at or near the pylorus, and on either side of it, or resulting from cicatrical contraction following the healing of such ulcers. It is often a useful procedure in cases of hemorrhage due to gastric ulcers on the lesser curvature, or to duodenal ulcers which can not be controlled medically and which threaten the life of the patient, as well as in the chronic dyspepsias due to ulcers which have not been relieved by medical treatment.

2. The operation has certain advantages over gastro-enterostomy and but few of its disadvantages.

3. Such objections as are urged against the operation, e. g., its inapplicability in the presence of adhesions surrounding the pylorus as well as in the presence of active and bleeding ulcers and also because of the fact that the new opening is not at its lowest point, taking advantage of gravity, are, according to our experience, more fanciful than real, since the operation has frequently been performed under these conditions with most gratifying results. The interesting experimental work of Cannon, Blake, and others, supports this contention.

4. The only contra-indications to the operation are inability to mobilize the duodeneum, when adhesions are too dense, and thickening and infiltration about the pylorus due to hypertropic forms of ulceration.

5. In atony or gastrotopsis with slight motor insufficiency or in nervous dyspepsia (not dependent on organic disease) the operation is also contra-indicated.

6. The special advantages of this operative procedure lie in its affording the opportunity to excise all ulcers in the anterior walls of the stomach or duodenum after direct inspection of the parts affected; also the application of treatment to ulcers situated in the posterior walls. It does not greatly disturb the normal relation between the stomach and intestines as is the case in other operations.

7. From our experience with the operation, the immediate as well as the final results are most encouraging, while in some instances partial gastrectomy or gastro-enterostomy is undoubtedly the operation of choice, nevertheless, on account of its simplicity and because of its satisfactory end results, we believe that pyloroplasty will continue to retain its position as a safe and useful procedure.

Binnie[18] cites some interesting "Uses of Fat in Surgery." Aside from the application of the fatty omemtum for tamponade, in cases of hemorrhage from the liver and other parenchymatous and vascular abdominal organs, he mentions the implantation of a mass of fat at the site of the mamma following radical removal of the breast, its implantation in osteomyelitic cavities, where there has been no fistula, the filling by it of cavities in the brain left after removal of tumors and the use in arthroplasty not only of pedunculated flaps of fat, but what he believes will answer as well, free or non-pedunculated portions of fat. Success in these various applications of fat in surgery is, as insisted on by the author, dependent upon rigid asepis.

McGrath[19] has devised an extremely simple and apparently efficient apparatus for direct transfusion by the aspiration-injection method. It consists simply of a fusiform rubber bulb of about 30 ccm. capacity with long drawn out slender tips for insertion into the respective vessels of the donor and recipient. The apparatus is perhaps more accurately described as spindle shaped. It is to be filled with a sterile saline solution of a proper temperature and the tapering ends of the spindle inserted and tied into the respective vessels. With a serrefine placed upon the donor's vessel the saline solution is, by compression of the bulb emptied into the circulation of the recipient. Now, by compression of the recipient vessel the expansion of the bulb fills it with donor's blood; again compression of the donor's vessel and a squeezing of the bulb transfers this blood to the recipient, the process being repeated sufficiently often to obtain the desired result. The advantages are:

1. Extreme simplicity of the apparatus and its ease of application.

2. The possibility which it affords, by knowing the capacity of the bulb, of transferring an exact quantity of blood from the donor to the recipient.

W. J. Mayo[20] in perhaps his latest discussion of the cancer problem states that cancer of the stomach is the most frequent form of cancer in the human body, and that in at least 75 per cent. of gastric cancers the pyloric half of the stomach, which is the readily removable portion, is involved. The opportunities, therefore, for the operative treatment of gastric cancer are many, but the surgeons performing the operation are few and the results meager. This he accounts for largely by our inability to make a sufficiently early diagnosis for the performance of a radical operation with a reasonable operative mortality and a fair pros-

pect of cure. The present situation, he says, is different, radiography enabling one to make a clinical diagnosis of cancer of the stomach early, in a large percentage of cases, so that exploratory incisions, which up to within the past year were our chief reliance, are fortunately no longer required in anything like the percentage of cases in which they were formerly necessary. The history of the patient, the radiographic and physical finding and the use of the stomach tube, to-day give a reasonable prospect of a correct early diagnosis.

Discussing the respective advantages of the one and two-stage operation, Mayo says that while in the last fifteen years they have in their clinic made a number of two-stage operations for cancer of the stomach, only one patient of the series having died as a result of the resection, yet he is at present under the impression that the percentage of five-year cures has not been as high in their experience as in the one-stage operation. The mortality depends more upon the cases which will be accepted for operation than upon any other one factor. Moreover, he says, we have had mortalities in some years following partial gastrectomies as low as six per cent.; in other years with an increasing experience and improved technic, a mortality of twice that or even more, due to the class of cases which we accepted for operation and which would previously have been subjected, if operated on at all, to a palliative gastro-enterostomy. He asks the question, "Should patients with advanced cancer of the stomach be subjected to radical operation?" and answers, "In view of the fact that some of these patients, especially those with large fungating growths, have lived beyond the five-year limit." The further fact must be considered that patients subjected to the removal of the visible growth in the stomach, even if all the glands can not be removed, will get a year or more on the average of a very comfortable existence, the possibility of cure, always remaining, since, in some cases, irremovable glandular hyperplasia is the result of infection rather than metastasis, so that these experiences, acknowledged to be accompanied by a high mortality, have led the author to extend the radical operation to a group of cases which he would formerly have considered inoperable.

Coming to the most serious technical question concerning the form of reunion of the gastric stump to the intestine after the removal of extensive disease, Mayo points out the difficulties attaching to the Billroth methods, Nos. 1 and 2, and speaks highly of the Pólya method, in which, after the excision is made, the end of the stomach is directly applied to the side of the jejunum about 6 to 12 inches from its origin. Pólya reports six operations with three deaths, all the fatalities, however, being in very advanced cases. Mayo has recently operated twelve cases by this method with but one death, and that from pulmonary embolis, the autopsy showing perfect condition of the operative field. The technique employed is broadly that of an end to side anastomosis and to be thoroughly comprehended should be studied in connection with the excellent illustrations accompanying his paper.

Sherman and Tate,[21] in an article on "Fractures near Joints and Fractures into Joints," reached the following interesting conclusions:

1. The trans-articular method is the only practicable one that gives perfect access to certain joint fractures and permits accurate reposition of the fragments.

2. The innocuousness of the trans-articular route for the reduction of these fractures may be considered demonstrated.

3. There would seem to be a decidedly mechanical advantage in using intra-articular screws or screws and plates to insure the accurate maintenance of the replaced fragments.

4. Screws and plates so used seem to be *per se* in innocuous. Aside from the trauma incidental to their trans-articular insertion, the reaction following the introduction of screws and plates does not differ from that caused by a foreign body in other connective tissues with the body. When properly countersunk they are rapidly excluded from the joint cavity by a layer of newly formed fibrous tissue which grows up from the narrow spaces. Under aseptic conditions the ultimate fate of intra-articular metallic fixation appliances is the same as that of extra-articular appliances: they remain firmly imbedded.

5. *Per se* the screws cause very little more reaction than the autoplastic bone peg.

6. The use of two different metals in the screws and plates does not change the result in the articulation, except so far as the possible electrical reaction is concerned in the staining of the tissues.

7. Even with slightly projecting intra-articular screws or plates, the function of the joint rapidly becomes normal. The direct wearing away of cartilage by an insufficiently countersunk screw head does not lead to intra- or extra-articular deformities, except under faulty technical conditions.

These conclusions were the result of experiment upon animals, but the authors have confidence that they will apply equally as well to the human being, sufficiently, at any rate, to say that they would not hesitate an instant to put a screw of proper size on any part of the surface of any joint if the conditions seem to require it.

In a resume of an exhaustive article on "Modern War Surgery," based upon personal experience in the last two Balkan wars, Behan[22] says, among other things, that he is compelled to modify his views in many particulars in regard to the treatment of shot wounds, for he saw many cases which he formerly would have operated upon, recover without operation, while others with operation die; but he adds that one can not apply war experience to civil practice, for both are radically different. He emphasizes, first, that injuries received in modern warfare should be handled as little as possible. Second, that dry dressings should be used, except in very severely infected wounds; for the latter, layers of gauze moistened with sixty per cent. alcohol are the best. Third, the most important factors bearing on the ultimate course of a wound are the primary dressings and the transportation. Under no circumstances should wounds be touched with the hand. Instruments which have been thoroughly cleansed with alcohol are entirely suitable for the handling of such wounds.

Foster[23] emphasizes the importance of a bit of technique witnessed by him in Lane's work at Guy's Hospital, and gives this technique, hitherto unnamed, the appellation of "Axillary Sup." Briefly stated, this method consists of introducing saline after the fashion of hypodermoclysis into each axilla by means of needles thrust through the outer portion of each pectoralis major muscle into the axilla, the fluid being delivered by the drop method, thus constantly feeding the circulation and bathing the tissues with normal saline. As a result the danger of shock is largely if not entirely eliminated, and the author states that not only do these cases so treated show freedom from post-operative

nausea and vomiting but from post-operative pain and extreme thirst.

Seelig and Tuholske[24] contribute a very practical article supporting the Moschcowitz method of operating for femeral hernia by the inguinal route. The superiority of this method over those commonly employed consists in a free opening of the peritoneal cavity along the usual line of incision for inguinal hernia, identifying Cooper's ligament and suturing it to the lower flap of the transversalis fascia and the edge of Poupart's ligament after a reduction of the hernia and ligation of the sac from within. This forms a thorough and lasting closure of the femoral ring in a way which can not be accomplished by the operations commonly in vogue. An interesting supplementary note on the anatomy of Cooper's ligament is well worth perusal.

The latest word in anaesthesia comes from Gwathmey[25] in his advocacy of "Oil-ether Colonic Anaesthesia." The experimental work on this subject was done in 1913, but the practical application and refinements of technique remained for this year's report. Space forbids a detailed description of this new method. Suffice it to say that Gwathmey has found it extremely satisfactory in over five hundred cases so administered in New York City by himself and others. Among the advantages of the method he states that it can be administered to the patients in bed without their knowledge, thus fulfilling many principles of anoci-association as enunciated by Crile; that in over ninety-five per cent. of cases there have been no eructations of gas during anaesthesia; that when the patient has been in fair condition there has not been a single instance of colitis, bloody stools, or blood-streaked returns; that the oil-ether narcosis is even then maintained automatically; that post-operative vomiting, nausea, and gas pains are reduced to a negligible quantity and that the patient recovers consciousness in an analgesic state.

The chief indications for the use of this method are:

1. Where the element of fear is in evidence, as in goitre and similar cases.
2. In obese individuals with narrowed air passages.
3. For bronchoscopy, gastroscopy, and all operations upon the respiratory tract, head, neck and chest.

The concensus of opinion as expressed in the symposium at the June, 1914, convention of the A. M. A. on colonic stasis and ptosis, warns against too enthusiastic radicalism in treatment, but gives the various short-circuiting procedures a recognized place therein, provided the indications are carefully defined.[26]

Roth[27] mentions the importance of "washing the skin from within out" by promoting active diaphoresis as an adjunct to chemical sterilization of the skin.

Hayes[28] describes an appliance for the operating table which gives superior control of the head and neck in all the positions used in the surgery of these parts.

Rhodes[29] proposes for redundant scrotum to resect the skin only, preserving the connective tissue and dartos.

Halstead[30] reiterates the importance of establishing the collateral circulation in a limb by partial occlusion of its main artery some weeks prior to the excision of an aneurysm of that artery.

Park and Nicoll[31] report encouraging results in tetanus by combined intraspinal and intravenous use of the serum according to a technique which they report in detail.

Maclaren[32] advocates drainage through the rectum in certain cases of pelvic abscess due to ruptured appendix.

Strauss[33] describes a method, thus far worked out only experimentally, of closing the pylorus by means of a free transplant from the anterior rectus sheath placed muscularis.

Davis[34] describes in detail the technic of the use of small "deep" skin grafts

McGrath[35] in a rather elaborate discussion of cancer of the prostate, calls attention to the frequency with which this gland is the primary focus for bone metastases.

Thomas[36] outlines his theory that all bony injuries in and about the shoulder joint depend on a common mechanism of hyperextension, and his treatment based thereon.

Parker[37] cites a case tending to prove that a fracture into an actively tubercular joint may heal as well as one in which no such complication exists.

Mayo[38] again calls attention to the value of resection of the cervical sympathetic, alone, or as an adjunct to operations on the thyroid, for the control of excessive exophthalmos.

Lyle[39] describes his aperiosteal method of amputation.

Collinson[40] reviews the surgery of gastric ulcer, advocating in general the combination of excision with gastroenterostomy.

MacFarlan[41] highly recommends the surgical antiseptic value of potassium mercuric iodide.

Descriptions[42] are given of new or improved apparati for: (a) Nitrous oxide-oxygen anaesthesia; (b) intratracheal insufflation; (c) Intraspinous medication; (d) vaporization of ether and chloroform; (e) Artificial pneumothorax; (f) Blood transfusion.

Meyer[43] describes several methods of intra- and extrathoracic oesophagostomy, comparing their indications and results.

Truesdale[44] suggests fastening numbered metal tags to the tapes of abdominal sponges to facilitate the verification of the count.

DeTarnowsky[45] reports favorable results in a series of cases of local and general peritoneal infection treated with the "ether lavage" of Souligoux and Morestin, with a description of the technique.

McWilliams[46] states that bone grafts (a) will live in a large proportion of cases whether in contact with bone or not, and whether the periosteum is retained or not; (b) will live in all cases if the periosteum be retained, without reference to bony contact; (c) periosteum alone, grafted into soft parts, will grow new bone in some cases.

Dorrance[47] claims several advantages for the transverse incision of the scrotum over the usual longitudinal one.

Smith[48] describes an ingenious and efficient apparatus for syphonage of the bladder which has the advantage of being readily improvised.

Pilcher[49] says that sufficient clinical observation on right-sided pericolic membranous films and bands go to establish the fact that they are often enough the cause of ill health and suffering to warrant surgical procedure. Pilcher advises that an operation for right-sided symptoms should be so planned as to make it possible to explore for their presence and do whatever is necessary for their removal.

Bacon[50] recommends the painting of the skin with Ag NO_3 and white-lead paint in checkerboard lines, numbered, to locate foreign bodies.

Pope,[51] under the title, "Use of Citrate Solution in Prevention of Peritoneal Adhesions," points out that a solution of nitrate of soda, two per cent., and hypertonic salt solution, three per cent., was slowly absorbed in the peritoneal cavity, taking forty-eight hours; nor-

mal salt, twenty-four hours or less. Experiments were tried and no adhesions were found at autopsy where they might be expected.

Janeway and Ewing[52] on "Nature of Shock," say that the all important factor in the development of shock is the loss of vasomotor control. This loss of control and its maintenance is never caused by acapnia or central nervous exhaustion, but, aside from afferent impulses, more especially splanchnic, to local peripheral causes, notably trauma.

Deaver,[53] on "Suprapubic vs. Perineal Prostectomy," says that the advantages of the suprapubic over the perineal route are:

1. Approach simple and bloodless.
2. Enucleation of growths, easy.
3. Working field large.
4. With rectal pressure prostate is more accessible.
5. No dangerous traction.
6. Muscular control of bladder not interfered with.
7. Permanent fistulæ less frequent.
8. Stones easily removed.
9. Sexual potency maintained.
10. Mortality no greater and percentage of complications less.

Nyulasy,[54] on "Uterine Prolapse," says that the only operation for uterine prolapse which to his mind bears the light of rigid investigation is the looping of the cardinal lateral ligaments (in the broad ligaments). These structures are the main elements holding the uterus at a more or less definite level in the pelvis. He illustrates, by vaginal hysterectomy, that when all but the ligaments mentioned are cut it is still difficult to bring the uterus down. The cardinal ligaments are demonstrated by turning the bladder down from the uterus; they arise by three fairly definite heads from each side of the uterus, the middle head corresponding to the uterine artery, the inferior head being attached to the upper surface of the lateral vaginal fornix and the superior head being attached a little above the median head. The three heads unite to a form a band above one-half inch in width, which passes outward, for over an inch between the layers of broad ligament. The cardinal ligament, which up to this point is largely muscular, changes its character, sending off fibrous bands, fan-wise, to the walls of the pelvis and other parts.

By dissecting these ligaments from the posterior peritoneal layer of the broad ligaments and looping them around to the front of the uterus, stitching them there, he gives lasting support.

The round ligaments are also taken in. Advantages:

1. Absence of hemorrhage.
2. Excellent immediate and permanent result.
3. Absence of shock.
4. Absence of raw surface.

MacCarty and McGrath[55] report that one in every two hundred and twenty-five of all appendicies and one in every fifty-three partially or completely obliterated appendicies were found to be carcinomatous. Thirty-one per cent. were found in association with other abdominal and pelvic conditions.

Nicolaysen[56] maintains that Herzinski's test for the differentiation of gastric ulcer from beginning carcinoma is far superior to any other for the secretional function of the stomach. He found it accurate in a large percentage of cases. The method consists of the examination of two test meals, one following the other, HCl being found present in the second meal where ulcer exists and in cases of cancer it may be present in the first but not in the second, except in markedly diminished quantities.

Goodman[57] reports sixteen cases of Arterio-Venous Anastomosis of the femeral vessels, in impending gangrene due to arterial thrombosis as a method of avoiding amputation.

Coley[58] says that the chief requirements for the early diagnosis of Sarcoma of long bones is a more careful study of all known clinical data, a larger number of Roentgen-Ray examinations in all cases of suspicious swellings of long bones, especially after trauma; exploration, observation and microscopic examination, in selected cases, but not as routine, and not too great confidence in a negative pathologic report.

The writer wishes to express his thanks to Drs. Donald Miner and S. A. Cosgrove for their assistance in the compilation of this article.

TABLE OF REFERENCES.

[1] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 73.
[2] Surgery, Gynecology and Obstetrics, Vol. xviii, Jan., 1911.
[3] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 19.
[4] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 35.
[5] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 119.
[6] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 536.
[7] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 572.
[8] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 621.
[9] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 632.
[10] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 422.
[11] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 429.
[12] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 470.
[13] Surgery, Gynecology and Obstetrics, Vol. xix, p. 415.
[14] Surgery, Gynecology and Obstetrics, Vol. xix, p. 452.
[15] Surgery, Gynecology and Obstetrics, Vol. xix, p. 528.
[16] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 105.
[17] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 273.
[18] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 336.
[19] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 377.
[20] Surgery, Gynecology and Obstetrics, Vol. xix, p. 683.
[21] Surgery, Gynecology and Obstetrics, Vol. xix, p. 131.
[22] Surgery, Gynecology and Obstetrics, Vol. xix., p. 199.
[23] Surgery, Gynecology and Obstetrics, Vol. xix, p. 248.
[24] Surgery, Gynecology and Obstetrics, Vol. xviii, p. 55.
[25] Gwathmey, Anaesthesia, p. 458-466.
[26] Journal A. M. A., Vol. lxiii, No. 6.
[27] Journal A. M. A., Vol. lxiii, No. 6.
[28] Journal A. M. A., Vol. lxiii, No. 6.
[29] Journal A. M. A., Vol. lxiii, No. 6.
[30] Journal A. M. A., Vol. lxiii, No. 3.
[31] Journal A. M. A., Vol. lxiii, No. 3.
[32] Journal A. M. A., Vol. lxiii, No. 9.
[33] Journal A. M. A., Vol. lxiii, No. 9.
[34] Journal A. M. A., Vol. lxiii, No. 12.
[35] Journal A. M. A., Vol. lxiii, No. 12.
[36] Journal A. M. A., Vol. lxiii, No. 12.
[37] Journal A. M. A., Vol. lxiii, No. 12.
[38] Journal A. M. A., Vol. lxiii, No. 14.
[39] Journal A. M. A., Vol. lxiii, No. 14.
[40] Journal A. M. A., Vol. lxiii, No. 14.
[41] Journal A. M. A., Vol. lxiii, No. 14.
[42] Journal A. M. A., Vol. lxii, No. 1.
[43] Journal A. M. A., Vol. lxii, No. 2.
[44] Journal A. M. A., Vol. lxii, No. 3.
[45] Journal A. M. A., Vol. lxii, No. 4.
[46] Journal A. M. A., Vol. lxii, No. 5.
[47] Journal A. M. A., Vol. lxii, No. 6.
[48] Journal A. M. A., Vol. lxiii, No. 19.
[49] Annals of Surgery, Jan., 1914.
[50] Annals of Surgery, Jan., 1914.
[51] Annals of Surgery, Jan., 1914.
[52] Annals of Surgery, Feb., 1914.
[53] Annals of Surgery, March, 1914.
[54] Annals of Surgery, March, 1914.
[55] Annals of Surgery, May, 1914.
[56] Annals of Surgery, June, 1914.
[57] Annals of Surgery, July, 1914.
[58] Annals of Surgery, Nov., 1914.

Laryngismus Stridulus.

The following combination is said to be a valuable antispasmodic:

Potassii Bromidi	3ij
Chloralis Hydrati	gr. xxxij
Syr. Aurantii Cort	f. 3j
Aquæ Menth. Pip	f. 3j

M. Sig.: One teaspoonful every half hour. —HUGHES.

A REVIEW OF THE RECENT ADVANCES IN OTOLOGY.

JAMES J. KING, A.B., M.D.,
ATTENDING LARYNGOLOGIST, HOSPITAL FOR RUPTURED AND CRIPPLED; CLINICAL ASSISTANT IN OTOLOGY, NEW YORK EYE AND EAR INFIRMARY; CHIEF OF CLINIC, GOUVERNEUR HOSPITAL, EAR, NOSE AND THROAT.
New York.

In presenting this review of some of the recent advances in otology, the length of the paper necessarily limits the writer to a consideration of only the more important things. Within the last few years a great deal of good, careful work has been done in otology, and all of this study will bear fruit in the future in better hearing, fewer individuals with the life heritage of a chronic discharging ear, and consequently a great economic saving to the state.

Present Status of Pain in Mastoiditis.

In a recent paper Bacon[1] states that pain is not such an important symptom in mastoiditis, as the patients are now operated upon at a much earlier stage of the disease. Pain is often absent, or is complained of only at the beginning of the attack. After spontaneous rupture or early incision of the drum head, the patient may not complain of any further pain except when firm pressure is made over the mastoid bone. In some cases, especially of scarlet fever and diphtheria, there may not be any complaint made of pain, and the involvement of the ear may be marked only by a sudden rise of temperature followed by a bloody discharge from the auditory canal. In cases of tuberculosis, deafness and a discharge from the ear may be the only symptoms of an acute otitis media. In cases of influenza, especially in children, pain is often absent, and a high temperature with tenderness over the mastoid may be the only symptoms of an acute otitis media. The symptom of pain has been so impressed upon the medical profession by the earlier writers, that it is sometimes difficult for the otologist to convince the family physician that some of the most serious cases are those in which pain is slight or at times absent. In such cases the infection is apt to be a virulent one.

Laboratory Aids in Otology.

The laboratory has furnished valuable aid in the diagnosis and management of middle ear diseases and mastoiditis; first, by skiagraphy, second, by blood examinations, third by the determination of the character of the infections—isolating the specific microorganism.

Excellent work along these lines has been done by Dixon at the New York Eye and Ear Infirmary. By the *x*-ray plate he has been enabled to compare the two mastoid bones; to determine the location of the lateral sinus, whether situated forward or normally, and often the location of the mastoid emissary vein; the character of the mastoid bone, whether pneumatic or infantile, etc; in some cases he has been enabled to diagnose perisinous abscess, and by repeated examinations the progress of the disease has been observed—whether resolving and clearing up or advancing as indicated by increasing cloudiness.

At the New York Eye and Ear Infirmary it is the routine practice to examine microscopically the discharge from the ears of every patient admitted to the wards of the hospital. The results of 5,496[2] such examinations as reported by Dixon is as follows: 26.6 per cent. showed a mixed infection; 24.8 per cent. streptococcus; 12.2 per cent. the pneumococcus; 7.4 per cent. staphylococcus (aureus and albus); 4.8 per cent. streptococcus mucosus capsulatus: 1.8 per cent. spirrilum of Vincent; 22.4 per cent. miscellaneous, negative, etc., among which were the bacillus pyocyaneous, diphtheria bacillus, tubercle bacillus, B. coli communis, Friedlander's bacillus, etc. He has found that the pus taken from the external auditory canal usually shows a mixed infection; but generally the predominating micro-organism is found in the mastoid cells, the sigmoid sinus, or the brain when these regions are involved.

It is quite generally agreed that the streptococcus mucosus capsulatus is the most insidious micro-organism with which the otologist has to deal, and its presence has been generally regarded as rendering the prognosis especially grave. The symptoms in these infections are fairly constant, being a long prodromal stage with slight symptoms, little or no pain, and a late development of suppuration or a complete absence of it. In most cases there is no fever and sudden development of complications. It may present the clinical picture of an influenza otitis, and differ in no respect from an ordinary otitis. The destruction is very rapid and insidious in the infections due to the streptococcus mucosus capsulatus, and is very apt to lead to mastoid and endocranial complications. Perisinous abscess is the most frequent endocranial complication, according to Zemann. The tendency toward perforation of the cortex externally is slight, but toward the inner cortex marked. All such cases should be carefully watched during the prodromal stages, and a very careful microscopical examination made of the smear from the discharge as this micro-organism presents certain characteristics which may lead to error.

Dixon[3] in a recent paper speaks of the insidious and destructive character of the streptococcus mucosus capsulatus, and reports six cases of acute suppurative otitis media followed by mastoiditis due to this micro-organism. All of them died—five from meningitis and one from brain abscess.

Dixon concludes, "It is not to be understood that the blood count, the form of infection, or positive *x*-ray findings alone can be relied upon to any considerable extent as determining the necessity for a mastoid operation. The clinical symptoms are all important; without them our modern aids are of little value. We may have a rather violent streptococcus infection in the canal or a pneumococcus infection which looks vicious in the smear, but both may recover after myringotomy though there may have been considerable mastoid tenderness. In either streptococcus or pneumococcus cases (though we believe more liberty can be taken with the latter as a rule), the danger signal may be a sudden rise in the polynuclear count, with or without an increased leucocystosis, especially the latter. A positive *x*-ray plate will again settle the diagnosis, though the clinical symptoms may not alone be sufficient to indicate the mastoid operation."

The importance of blood cultures in the diagnosis of the complications in otology, has been considered by Sondern,[4] whose conclusions I quote: "The acute otitic infections are due chiefly to the streptococcus with the other more common organisms in the following order: staphylococcus, pneumococcus, streptococcus mucosus, etc. A prognosis concerning the probability of extension or virulence of the infection is not justified by the type of infection. A bacteremia denotes infection of the general blood current, but in itself is not sufficient for a diagnosis of sinus, bulb or vein involvement. While sinus thrombosis is the most frequent cause of positive blood cultures in the cases under consideration, exceptions are too frequent to justify such conclusion. Cases of bacteremia with and without

sinus phlebitis present different clinical pictures, and the positive blood culture does not aid in the differential diagnosis. Negative blood cultures do not necessarily exclude a sinus thrombosis, and suggestive symptoms should call for repeated cultures. The blood cultures may aid in the differential diagnosis as detailed, but careful clinical observation and other laboratory aids as indicated are often of even greater service."

Re-Education of the Deaf.

In cases where the aural disease has been of long standing and has produced serious impairment of the hearing, Maurice and others have offered methods for the re-education of the deaf. They do not claim to cure the conditions which caused the deafness. Maurice has devised an instrument for the re-education of the deaf which he calls a kinesiphone. His claims for it are: "It mobilizes in a physiological manner the organ of hearing; it stimulates the auditory receptivity of the deaf; it excites the labyrinth in which the nerve fibres have become sclerosed and atrophied; the sonorous massage produces a vasodilation which is decidedly marked; and the vibration stimulates the ciliated cells in the organ of Corti."

This method has not been sufficiently used to prove the benefits claimed for it, and there is a diversity of opinion among otologists as to the necessity of a mechanical apparatus for this purpose. Some believe that re-education of the deaf, or the hard of hearing ear, is better accomplished by means of the human voice.

Bacterins in Ear Diseases.

The use of bacterins in ear diseases has received considerable attention by otologists within the last few years, and no one doubts now that they will in future be of great value in the treatment of ear infections. Coates[6] in a valuable review of this subject, has reported his own observations and reviewed the work done by others in this field. On the whole, the author is well impressed with the use of auto-vaccines, or stock vaccines, for infectious diseases of the ear. His experience began about three years ago with the use of autogenous vaccines in acute and sub-acute cases, and has extended to cover the chronic suppurative ears and also includes a series treated with commercial mixed vaccines. The following history of five acute cases is given by him, each starting with a severe acute suppurative otitis media; incision of membrana tympani; copious discharge but without entire relief from pain or return of the temperature to normal. In each case there was a well marked mastoid tenderness with some redness and puffiness back of the auricle and a leucocytosis. This condition remained the same for a week or ten days when vaccine therapy was begun. In two of the cases a laboratory stock vaccine (staphylococci) was used, and both cases cleared up after the second dose of two hundred million and proceeded to prompt convalescence. In the other three cases an autogenous staphylococcic vaccine was administered. Two cleared up at once; the other, who received nine hundred million at a dose, soon lost her mastoid symptoms but the ear was not dry permanently for three weeks.

A few years ago Nagle reported thirty-nine cures out of a series of forty cases of chronic suppurative otitis media treated by vaccines. This record has not been equalled by any writer since that time.

In the acute cases it is more difficult to determine just how much is accomplished by the vaccines, as under appropriate treatment of early incision of membrana tympani establishing good drainage the majority of acute cases will recover in from ten days to two weeks. In cases where the vaccines were used, myringotomy was done before the vaccine treatment was begun. It is easier to see the results of the bacterins in the cases of chronic suppurations, and it is believed that they offer a larger field of application in these chronic cases. Many of these cases have resisted all forms of treatment, and the bacterin treatment should be given a trial in these cases.

After careful consideration of the work of others and from his own limited experience in the bacterin therapy of aural diseases, Coates concludes: "In view of the results quoted above, it can scarcely be doubted that this form of therapeutics is destined to play an important part in the practice of otology. Theoretically autogenous vaccines should prove the most useful since they are the most scientific and when obtainable should be used; but it takes a skillful bacteriologist to make a potent vaccine, and if it is not potent failure will result. Many hospitals keep on hand stock suspensions of the more common varieties of bacteria for use in emergencies, where time will not permit of the making of an autogenous vaccine which often takes four or five days, and these stock vaccines may be of much value where the invading organism can be determined. In many cases, however, it is expedient to use a mixed commercial vaccine without such determination, and it has been shown that good results can be obtained by this means. But this vaccine must also be potent, which means that the firm producing it must be reliable. Either of these methods seems to give nearly perfect results in acute and sub-acute cases, and that either may give the same results in chronic cases seems to be shown by the two series of cases (Nagle's and Coate's)."

The use of bacterins in chronic ear infections has been tried effectively at the Manhattan Eye, Ear and Throat Hospital, and Haskins[8] reports his results in a series of thirty-three cases. One hundred and eighteen cases were assigned to him as suitable for the test, but cultures were made in only fifty-two of these, and vaccines were given to only thirty-three. This is explained by him in three ways: in a large number of cases the discharge dried up under careful local treatment; some failed to return and a few objected to the hypodermatic injections. The results are as follows: In two, final results were unknown as the patients did not return after their ears became dry; eight were improved, and are still under observation; twenty-three have dry ears, and are seen about every two weeks.

Inadequacy of Drainage in Acute Otitis Media.

The inadequacy of drainage afforded by the ordinary myringotomy has often been felt by otologists in certain cases, and Lewis[7] has offered a valuable suggestion to secure better drainage in these cases. In this excellent paper he reports a case in a man sixty-five years of age, who had been suffering for several weeks from a virulent type of purulent otitis media. On examination he found an external auditory canal stenosed to some extent, sagging of the upper posterior canal wall and the drum membrane bulging, very thick and edematous. The patient's condition was such that a mastoid operation was advised, but as the patient had diabetes mellitus neither he nor his family physician would consent to the operation. Paracentesis had been performed three times before Lewis saw the patient, and he made a fourth. After making a very extensive incision beginning under the anterior fold of the drum membrane and extending around the circumference of the membrane to and through the posterior fold and through the sagging portion of the canal wall, satisfactory drainage

was afforded for one day. On the second day after the incision, however, owing to the edematous condition of the drum, it had so nearly closed that the purulent secretion could not escape freely. In his effort to maintain free drainage he removed with Hoffman's middle ear punch forceps the lower and middle posterior portion of the drum membrane. The results were satisfactory. The profuse discharge escaped very freely and the patient made a good recovery.

During the four years which have elapsed since seeing the case above reported Lewis has seen twenty-two cases of similar character; i. e., cases in which the edematous swelling of the tympanic membrane was so great as to seriously interfere with drainage from the middle ear and to render abortive every attempt made to improve the condition by merely incising, no matter how extensive the incision. In all of these cases he removed a portion of the drum membrane with the aid of Hoffman's middle ear punch forceps, and recovery followed in eighteen of them without the necessity of opening the mastoid cells. He believes that in all of these cases the mastoid operation would have been imperative without this method of drainage, and he adds that in only one of these cases did the perforation in the drum membrane fail to close.

He advocates "The adoption of this method only in cases in which it is evident after the lapse of a reasonable period of time that the usual myringotomy, because of the agglutination of the edges of the incision, cannot be trusted to furnish the necessary freedom of drainage."

Treatment of Chronic Catarrhal Otitis Media.

Some very careful work has been done recently on the investigation of the condition commonly called chronic catarrhal otitis media by Heath of London and Hays[8] of New York. This condition has always been, and is still an obstinate condition to treat. The hope of the future lies in a careful study and differentiation of the causes which produce the deafness and tinnitus. Heath has suggested that the cases with relaxed membrana tympani be treated by applying an irritant to the drum membrane in the hope of overcoming the relaxed condition of the drum and the chain of ossicles. Hays has applied the Heath treatment in combination with the treatment of other conditions as indicated. He differentiates between cases with stenosed eustachian tube and relaxed drum and cases with open tube and relaxed drum membrane and ossicles. The treatment he carries out in cases with stenosed eustachian tube and relaxed membrana tympani and ossicles consists in several courses of daily treatments for periods of four to six weeks. The courses of daily treatment may have to be repeated two or three times during the year. He dilates the eustachian tubes by means of the Yankauer bougies, treats the nose, throat and naso-pharynx according to the indications, and applies to the drum membrane daily an irritant. As suggested by Heath cantharides seem best to meet the requirement of the irritant.

Cantharides collodion is the strongest solution of this drug used, and several more dilute solutions are employed. The weaker solutions are made up as follows: To one ounce of water is added one grain of cantharides and one grain of potassium hydroxide. This is called solution number one. One-half of this solution, that is, one-half ounce is added to an equal amount of glycerine, making solution number two. Solution number two is divided, and in a similar way solution number three is made by the addition of another half ounce of glycerine. Solution number four is made from solution number three by a similar dilution with glycerine. This makes in all five solutions.

A daily application is made to the ear drum extending over a period of four to six weeks, depending upon the amount of reaction that takes place. Before applying the solution the canal is thoroughly wiped out with a one per cent. yellow oxide of mercury salve. The cantharides collodion is applied on the first day of treatment by means of a cotton tipped probe. Before the second treatment the ear canal and ear drum are thoroughly cleansed. If the reaction is not too great the collodion may again be applied. If, however, the reaction is considerable one of the weaker solutions is applied to the drum. It is claimed that the conditions present must be carefully watched from day to day, and great judgment exercised in the applications of this very irritating substance to the ear drum. The hearing will probably be decreased at the beginning of the treatment, and the patient must be warned of this lest he get alarmed and stop the treatment.

Work Upon the Labyrinth.

Much excellent work has been done upon the labyrinth within the last few years. Tests have been utilized to determine whether the labyrinth is functionating or dead. These tests are known as the caloric, the turning and the galvanic; and the first two mentioned are the more important from a practical standpoint. By the character of the nystagmus and other symptoms produced, such as vertigo, nausea, etc., much information can be gained as to the condition of the labyrinth. Friesner and Braun in this country have done commendable work along these lines.

There is no more complex problem before the otologist to-day than when to operate in diseases of the labyrinth. The whole subject is so recent that all have had to feel their way as they went along. The following indications for operations upon the labyrinth, based upon the clinical symptoms solely, are offered by Leidler of Vienna, and are quoted from Harris's[9] paper:

First: Every diseased labyrinth dependent upon a purulent otitis whether acute or chronic, combined with a labyrinthogenous intercranial complication, must be operated upon at once. Of these complications the lightest degree is represented by a persistent headache on the side of the affected ear.

Second: Every labyrinth which shows involvement as a result of an acute or chronic otitis with symptoms of acute diffuse labyrinth suppuration, advanced nystagmus toward the healthy side and lack of response to the turning test must at once be operated upon in case the temperature is more than 38 degrees C., or the symptoms do not abate within four days.

Third: A labyrinth which as the result of an acute or chronic otitis is completely destroyed functionally, and does not comply with the indications just given, must at once be operated upon, in connection with the radical opening of the antrum, in case a spot in the bony capsule shows a pathologic opening into the peri or endolymphatic space (fistula, cholesteatoma, sequestra, tumor, etc.), or where there are persistent symptoms of irritation of the labyrinth—dizziness, nystagmus, vomiting.

The above indications for operations upon the labyrinth are considered by leading otologists as on the whole conservative, and are for the most part generally accepted.

Radium in the Treatment of Diseases of the Ear.

The application of radium in the treatment of ear diseases is so new that no definite conclusions can now be drawn as to its value. Some cases have been re-

ported with favorable results. There is some tendency for certain of these patients to claim improvement whenever renewed interest is taken in them with any new form of treatment. This is especially true in patients where the tinnitus is a distressing symptom.

The following results with the radium treatment have been reported by Bryant[10] in a series of twenty cases—a total of forty ears:

Hearing unchanged in six ears—two atrophic middle ear catarrh, four effects of middle ear suppuration.

Hearing improved in thirty-three ears.

Hearing much improved in fourteen ears—six atrophic middle ear catarrh, two hypertrophic middle ear catarrh, one non-suppurative labyrinthitis, three oto-sclerosis, two effects of chronic middle ear suppuration.

Restored to normal in six ears—two hypertrophic middle ear catarrh, four atrophic middle ear catarrh.

It is believed by him that radium fulfills two urgent requirements in otology; first, the stimulation of cell growth; second, the destruction of cells. Often it is desirable to produce both of these results in the same ear.

There are four apparent results from the action of radium in the ear:

"1. The presence of the radium capsule in the auditory canal acts as an irritant, as any foreign body acts.

"2. The heat evolved by the radium has a warming effect on the meatus.

"3. The electrical activity of the radium ionizes the surrounding matter.

"4. The radiation of the radium produces diverse effects, depending upon the individual and the dosage."

Of the three kinds of rays produced by radio-active substance, the β rays are considered most important from an otological standpoint as in other diseases. The slow, shallow a rays act only as a superficial destructive agent, and their action is not desired in the treatment of ear diseases. Intermediate between the a rays and the β rays are the rapid, deeply penetrating γ rays.

In the application of radio-active substances to the ear, great care must be exercised in determining the susceptibility of the individual to their action, and the reaction must be carefully watched. Over use will result in decreasing the hearing and may produce severe burns. Above all things damage should not be produced by the application of radium to the ears.

40 East Forty-first Street.

Bibliography.

1. Bacon—*Medical Record*, Vol. 86, No. 1, 1914: "Laboratory Aids in the Diagnosis of Acute Mastoid Disease, etc."
2. Bacon—Text-Book on Otology.
3. Dixon: "Combined Laboratory and X-ray Indications for the Mastoid Operations." *Annals of Otology, Rhinology and Laryngology*, June, 1913.
4. Sondern: "Bacteriologic Diagnostic Aids in Acute Otitic Disease and Its Complications." *Annals of Otology, Rhinology and Laryngology*, December, 1912.
5. Coates: "Bacterins in Ear Diseases." *Laryngoscope*, July, 1914.
6. Haskins: "The Use of Vaccines in Chronic Ear Infections with Report of Cases Treated." *Am. Journal of Surgery*, July, 1914.
7. Lewis: "The Inadequacy of the Drainage Sometimes Obtained by the Ordinary Myringotomy in Acute Otitis Media, and a Method of Overcoming the Difficulty." *Laryngoscope*, February, 1913.
8. Hays: "The Symptoms and Rational Treatment of Pocket Handkerchief Deafness." *Interstate Medical Journal*, Vol. XXI, No. 10, 1914.
9. Harris: "Report on the Recent Developments in Otology." *New York State Medical Journal*, Vol. XIV., No. 11, 1914.
10. Bryant: "Notes on the Use of Radium in Treatment of Diseases of the Ear." Transactions of the American Otological Society, 1914.

A REVIEW OF RECENT PROGRESS IN THE TREATMENT OF DISEASES OF THE NOSE AND THROAT.

HAROLD HAYS, M.D., F.A.C.S.
New York City.

In *The Laryngoscope* of April, 1914, there appears a classified bibliography with 3,198 references, of work pertaining to the nose, throat and ear. Most of these references are to papers appearing in journals throughout the world during the year 1913. The editor rightly says that the literature on this subject has assumed "unmanageable proportions."

It is therefore with a great deal of diffidence that the writer assumes the task of laying before you the most important advances in these specialties. A great deal of progress has been made—opening up fields for greater research. General medical and surgical principles are being applied in such a way that the older specialist with his swab and spray which he applied to everything, has to change his tactics or relegate himself to medical oblivion.

Let us consider briefly the most important advances of the past few years.

Plastic Surgery of the Face.—With the exception of John O. Roe of Rochester, very little of this work was attempted by the "ethical" surgeon until within recent years so that the quack beauty specialist reaped a harvest. This very important line of work is now being thoroughly studied—resulting in marvelous advances in a very short time. Carter[1] in 1909 described his operation of transplanting a section of the ninth rib into the nose for saddle-back deformity. The operation gives excellent results in selected cases. The writer has performed four of these operations within recent years with gratifying results. Carter's nasal splints have also proved of value. Recently a very important article on rhinoplasty has been written by Dr. Lee Cohen[2]. This writer has succeeded by original methods in reducing the size of the nose, in shortening the nose, in raising the tip, in taking off "humps," etc. The most comprehensive work on the subject appears in Loeb's "Operative Surgery of the Nose, Throat and Ear,"[3] by Dr. Joseph C. Beck.

The injection of paraffin is another important procedure. Cold paraffin may be used but the kind usually employed is one that has a melting point around 112 degrees F. The injection is best made with Harmon Smith's syringe.[4] The injection should be made from above downward. The point of the needle is carried just beyond the depression and the injection continued as the needle is withdrawn. As soon as anemia is noted the injection should be stopped. One should not attempt to correct the entire deformity at one sitting, and a second injection should only be made at a month's interval.

Other deformities of the face—such as the mouth and ears have been corrected by methods described by Miller[5] and others.

Intranasal Conditions.—There have been several modifications in the technic of intranasal operations. The submucous resection still remains as the most important conservative operation in the nose. Various methods of anesthesia have been advocated, the best of these being that described by King[6]. This author gives a hypodermatic injection of scopolamin hydrobromid one-half hour before operation. He then applies 20 per cent. cocain over the septum, followed by applications of 1-1000 epinephrin solution. The anesthesia is completed by injecting on each side 8 to 10

Cc. of sterile salt solution to which a few drops of epinephrin solution are added. I have followed a similar procedure of infiltration anesthesia with excellent results. Kneedler[7] adopts the novel procedure of replacing the cartilage after its removal. The cartilage is removed with a swivel knife and kept in normal salt solution until after the operation. It is then trimmed with a knife, made straight and reinserted, the initial incision being closed with a few stitches.

A fact evidencing the advance in nasal surgery is the tendency toward conservative surgery of the septum. A few years ago the pendulum swung toward radicalism. A septum operation meant the removal of the maxillary crest, the cartilage and every part of the vomer that could be seen or grasped. To-day the nasal surgeon is content in removing only those important parts that cause obstruction. More spur operations are being done submucously. In certain cases, especially where there is an atrophic rhinitis and the mucous membranes very thin, one attains better results with the old Gleason operation[8], i. e., cutting on three sides, in front, behind and below the obstructing part, and fracturing the part above.

Conservative work on the turbinates, particularly the inferior turbinates, is still being advocated. Posterior tips even yet cause trouble and must be removed. If there is hypertrophy of the anterior portion, a submucous turbinectomy is often satisfactory, an operation that can readily be performed if the nostril is large enough to obtain a good view of the operative field. After concainization, an incision is made along the anterior free border down to the bone and the parts submucously separated. An incision is made along the free edge and the bone with membrane adherent below is excised. The upper mucous membrane is then smoothed down over the raw surface.

Cauterization of turbinates is unsatisfactory and has greatly fallen into disuse. Freezing the inferior turbinate by carbon dioxid snow is advocated by Gradle[9].

Surgery of the middle turbinate is of great importance. Here lies the obstruction in many cases of sinus disease and conservative surgery of this body will often allow of sufficient drainage of the sinuses so that no further operative procedure will be necessary. The middle turbinate may readily be removed with scissors and snare.

One may get an idea of the vast amount of work being done on the accessory sinuses by noting the 192 references to this subject during the year 1913. Here again one encounters the striking fact that conservatism is of utmost importance. Proper drainage is the keynote to cure in most of these troubles and yet in chronic cases radical operations are sometimes necessary.

During the acute stage of sinus disease simple remedies only are necessary, such as keeping the nose clean by using alkaline sprays. During the subacute stage where there is a continual discharge of pus, autogenous vaccines seem to be of great value.[10] The writer has cured two cases of frontal and ethmoid sinusitis during the past year by injections of autogenous vaccines. However, in those cases where there is evidence of long standing disease, operative measures afford the only method of cure. Radical operations on the frontal and maxillary sinuses remain the same. The radical operation on the ethmoid labyrinth (and sphenoid cells) has been perfected by Ballenger[11] and Mosher.[12]

Our former methods of attacking the ethmoid cells were extremely crude. One was content to remove the middle turbinate and cut away the cells as best he could with the biting-forceps, then breaking down the septa with a suitable curette. Ethmoid suppuration did not stop nor did polypi cease to form. The procedure was unsurgical. The Ballenger and Mosher operations are worked out on well-defined surgical principles and although dangerous, particularly the Ballenger operation, in well selected cases, the results are excellent.

Ballenger's operation consists in removing the ethmoid mass by severing it from its three planes of attachment, namely—from the anterior wall of the sphenoid, from the cranial plate and from the outer or orbital wall of the nose. Cleverly devised instruments accomplish this readily when used by a competent surgeon. Mosher's operation, although originally devised for entering the frontal sinus can be employed for removing the ethmoid cells. A suitable curette is introduced until the cutting edge facing the orbit is above the anterior attachment of the middle turbinate. The bone, being very thin in this region is readily broken down. Firm pressure is made toward the orbit, drawing the curette downward and forward. Thus the anterior ethmoidal cells are completely opened. The posterior ethmoidal cells to the sphenoid are readily attacked through this opening.

The results of external operations, particularly on the frontal sinus and ethmoid cells, are much more satisfactorily performed, particularly from a cosmetic point of view. The mortality is not very high. Although numerous operations are being performed[13] for these chronic conditions (results of poor intranasal treatment or neglect), one fact is evident to-day—that the treatment of the acute or chronic conditions of the sinuses is done far more accurately. In the future one will see, we hope, far less necessity for this grave operation. Of course, anatomical anomalies in these sinuses will always be met with, necessitating an operation for better drainage than can be done by merely enlarging the drainage openings in the nose.[14]

Among medical conditions which demand our attention are the treatment of atrophic rhinitis and hay-fever. For the former dozens of theories have met with acceptance and have been used. The writer regrets that no specific has as yet been found. Within recent years, an attempt has been made to diminish the size of the nasal cavity in which the atrophy mainly occurs. Large[15] explains in detail the injection of paraffin into the turbinate bodies, by which he has obtained excellent results. Where the septum is deflected greatly to one side, the Gleason operation,[16] by which it can be straightened and moved toward the opposite nasal cavity, offers the most hope. Cleanliness is of paramount importance in these cases. The writer has found two per cent. scarlet red in albolene or lanolin, applied daily over the entire mucous membrane, very helpful.

The treatment of hay-fever has occupied the attention of rhinologists for many years. The usual procedures for cure have been useless. Dunbar's pollantin[17] was heralded with joy. From recent reports, this remedy seems efficacious in about 25 per cent. of the cases. Graminol, a serum taken from animals during the flowering season of plants, has been successful in a similar number of cases (see Report of German Hay Fever Association). Lately there are various reports of the use of autogenous vaccines in the treatment of this disease, applied on the theory that hay-fever is due to a combination of micro-organisms in the nose. However, this is far from true. Recent biological investigations prove that hay-fever is due to an anaphylaxis caused by the pollen of certain plants, usually by

rag-weed and goldenrod. Koessler[18] and Lowdermilk[19] have both succeeded in curing hay-fever patients by the injection of immunizing doses of pollen before the hay-fever season commenced. The writer is now pursuing a series of experiments by which he hopes to prove that this baffling disease can be cured.

Throat Conditions.—Perhaps one of the most important points to be mentioned is the great knowledge we have gained about the relation of the mouth and teeth to generalized diseases. One no longer considers every case of nasal obstruction due to adenoids and tonsils. A high-arched palate is responsible for this condition in many instances. Orthodontia has accomplished marvelous results.[20] Numerous papers have also been written on the functional relation of the tonsils to the teeth. Every nose and throat specialist today examines the mouth, teeth and palate as a routine procedure.

More conservatism is being shown in the work on the tonsils. The writer over two years ago showed this trend of conservatism in one of his papers.[21] His conclusions were as follows:

1. That the tonsils have a definite function in early childhood.
2. That tonsils should not be removed unless there is some especial indication before four years of age.
3. That small, buried tonsils associated with enlarged cervical glands should always be completely removed unless some other definite cause is found for the condition.
4. That tuberculosis is often found to be of tonsillar origin.
5. That one of the most important points to be considered in judging whether a tonsil should be removed or not, is the size of that tonsil in relation to the individual throat.
6. All tonsils, large or small, which seriously interfere with respiration, should be removed.
7. That many local pathological conditions are caused by diseased tonsils.
8. That many cases of middle ear catarrh could be prevented by removal of the tonsils.
9. That there is a distinct relationship between the tonsils and many general diseases.
10. And, finally, that the promiscuous removal of the tonsils of children without the finding of some associated pathological condition, is pernicious; and that all cases demanding operative interference should be carefully selected.

Operative measures of one kind or another, all tend toward the removal of the tonsil as a whole, i. e., tonsillectomy. So long as a complete enucleation is done, it makes little difference what method is used. Sluder, Beck and others have adopted different methods of technic.

Acute tonsillitis is being rapidly cured by the injection of vaccines of streptococci in conjunction with the usual local treatment. The writer[22] a few years ago advised the application of strong solutions of silver nitrate (50 per cent. to 75 per cent.) to the crypts of the tonsils in the treatment of this disease. He still believes that this treatment brings about good results when it can be done accurately.

J. C. Beck[23] advocates the removal of adenoids under direct inspection—a procedure that can be carried out very simply. A suitable rubber band (or small catheter) is run into each nostril, down the posterior pharyngeal wall and brought out of the mouth. The ends of the rubber are held by an assistant, thus retracting the soft palate and exposing the operative field.

The Region of the Larynx and Bronchi.—The lingual tonsil is recognized as the direct causation of chronic cough and its removal is more frequently advocated than ever.[24] Amputation of the epiglottis in cases of severe pain from tuberculosis is advocated by Lockhard[25] and others.

By far the most important advance in our specialty has been in the work upon the larynx. Direct laryngoscopy has superceded every other method of reaching the operative laryngeal field, particularly so since the invention of the "Suspension Laryngoscope" by Killian. By this method, the patient actually "suspends" his head by a very clever apparatus so that the operator's hands are free. The writer has often maintained that the nose and throat specialist of to-day is using better general surgical measures in his work, a fact well proved by the recent measures employed by Lynch in his work on the larynx.[26] Lynch has devised various forms of knives, scissor and forceps, patterned after the actual surgical instruments but made of suitable length, and size to be used in the larynx, and with these has been able to perform surgical operations on those parts with ease. He has excised a single pedunculated tumor by picking it up with forceps, encircling its base with a wedge-shaped incision and removing it by clean dissection. In one case he was able to bring the cut surfaces together by suture. "This to me," he says, "is far more surgical than the older method of removing by tearing, pulling or twisting forces which must obviously carry with it adjacent normal mucous membrane, leaving a surface to heal by granulation and producing a scar of more or less size, the contraction perhaps, interfering with the normal function of the part."

The removal of foreign bodies from the bronchi, lungs and esophagus has become a more or less simple matter under direct bronchoscopy[27] or esophagoscopy. Freudenthal[28] has treated with success cases of bronchial asthma by adrenalin applied directly through the laryngoscope and bronchoscope.

11 West 81st Street.

Bibliography.

1. Carter. *Jour. A. M. A.* April 29, 1911.
2. Cohen. *The Laryngoscope.* June, 1914.
3. Loeb's "Operative Surgery of the Nose, Throat and Ear," Vol. 1. 1914.
4. Wright and Smith. "Diseases of the Nose and Throat." Page 67. 1914.
5. Miller. "Cosmetic Surgery." 1908.
6. King. *Jour. A. M. A.* May 30, 1914.
7. Kneedler. *Pittsburgh Med. Jour.* July, 1913.
8. Gleason. *The Laryngoscope.* May, 1914.
9. Gradle. *The Laryngoscope.* August, 1914.
10. Hays. *Medical Review of Reviews.* February, 1913.
11. Ballenger. "Diseases of the Nose, Throat and Ear." 4th Edit.
12. Ibid.
13. J. E. MacKenty and G. H. Cocks. *Medical Record.* July, 1911.
14. L. M. Hurd. *The Laryngoscope.* August, 1909.
15. S. H. Large. *The Laryngoscope.* March, 1909.
16. Gleason. *The Laryngoscope.* May, 1914.
17. E. Mayer. *N. Y. Med. Jour.* August 8, 1903.
18. Koessler. *Jour. of Infectious Diseases.* 1914.
19. Lowdermilk. *Jour. A. M. A.* July 11, 1914.
20. Haskins. *The Laryngoscope.* 1911.
21. Hays. *N. Y. Med. Jour.* July 13, 1912.
22. Hays. *Med. Record.* May 13, 1911.
23. J. C. Beck. *Am. of Otology.*
24. Hays. *Am. Jour. of Surgery.* August, 1913.
25. Lockhard. "Tuberculosis of the Nose and Throat."
26. R. C. Lynch. *The Laryngoscope.* July, 1914.
27. Jackson. "Peroral Endoscopy and Laryngeal Surgery."
28. Freudenthal. *The Laryngoscope.* June, 1911.

OPHTHALMOLOGY DURING THE YEAR 1914.

DUNBAR ROY, A.B., M.D., F.A.C.S.
Atlanta, Ga.

No marked advancements have occurred in ophthalmology during the preceding year. This means both from a therapeutic and surgical standpoint. Three subjects have occupied more attention, received more discussion and probably been the subject of more clinical research than any others in the field of ophthalmology.

These are: glaucoma, the operative removal of cataract, and the use of vaccines in certain pathologic conditions.

1. Glaucoma has probably occupied more attention in ophthalmological discussions than any one subject and was the one important topic before the Ophthalmological Section of the International Congress of Medicine in London.

The main point of discussion has been concerning the newer operations for this condition and like all subjects of its kinds, the advocates of the different operations are numerous.

So far the real pathology of glaucoma has not been solved and until this has been accomplished all operative measures for its relief must be entirely experimental. And yet this is true with every operation in surgery and the fact that relief comes to the patient must give it a stamp of approval, although the rationale of its results may not be entirely clear to the profession. The signs and symptoms which aid us in the diagnosis of glaucoma are pretty universally accepted. Since the introduction of Schiotz's tonometer for estimating the tension of the eye ball, most ophthalmologists feel that we have a much more scientific accuracy in estimating these symptoms, although Orr in the *Ophthalmic Review* holds that there "is a physiological inexactitude in its readings." He comes to these conclusions from experiments and holds that while this instrument is a great scientific aid in the accuracy of measuring the tension, it is by no means mathematically correct. Wessley in the *Zeit. f. Augenheil.* also says that the elasticity of the sclera is so variable that Schiotz's tonometer cannot be exact. However, as Dor says this instrument certainly lends a precision to our observations.

The question of the best method or methods of treating glaucoma is still a matter of discussion, but as de Schweinitz says the modern operations have turned the scale in favor of an early operation for glaucoma.

The writer has reviewed the various operations proposed and used in the treatment of glaucoma, in a paper read two years ago before the Southern Medical Association in Jacksonville, Fla.

The one operation which seems to have met with most favor among opthalmologists is the "trephine operation" of Elliot.

On the other hand within the last year several cases of late infection has been reported which necessitates a belief that the operation is not entirely free from danger.

On the other hand, very favorable reports have come from various operators—Meller has published some statistics where he has shown that out of 389 sclerectomies, according to LaGrange, 1.3 per cent. of the eyes were lost by late infection, while with 178 Elliot operations late infection was apparently not observed. Since Meller made this statement several cases of late infection have been reported which shows that the Elliot operation is open to the same objections.

Summing up, however, the pros and cons the large majority of the most extensive operators seem to prefer the trephine operation in preference to all others.

2. The question of the surgical removal of senile cataract has been prolific of much discussion. Those surgeons who have visited Major Smith in India and become more or less adept in the removal of the lens in capsule under the guidance of Major Smith himself and with an abundance of clinical material still hold that it is the proper operation to perform. Others, however, and they are in the great majority, while considering this the ideal operation, do not consider that it is universally appliable to American patients and for this reason they are better satisfied with the old operations and its final results.

Two cases of spontaneous resorption of senile cataract have been reported by Virrey and Kellogg and for this reason there has been some experimenting along the line of the "non-operative" treatment of senile cataract. Meyer-Steineg has reported good results in improving vision in these cases by the daily instillation in the eyes of a ¼ to ½ per cent. solution of either iodide of potassium or dionin.

Vaccine therapy has been much used and much discussed during the last year in ophthalmic literature. Its chief exponent Rohmer has been using the auto-vaccines in various inflammatory affections of the eyes and he claims most excellent results with this line of treatment. Since so many inflammatory lesions of the eyes especially of the sclera and cornea have been denominated tubercular, the treatment by the use of tuberculin injection has been quite extensively used. Quite a lengthy discussion was occasioned in the Section on Ophthalmology at the last meeting of the American Medical Association over the paper read by Theobald on the non-tuberculous nature of phlyctenular conjunctivitis and keratitis. The younger or experimental school of ophthalmologists adhered to the tubercular theory while the older men of long experience and ripe judgment took the opposite view. The arguments on both sides were good and we may perhaps see a further discussion of the subject at some future meetings. There is no doubt but that just as many of these cases of phlyctenular conditions recover under the old line of treatment as they do under the so-called tubercular regime.

The use of salvarsan and neo-salvarsan in syphilitic affections of the eye has also received some attention in the ophthalmological literature. Quite a little has been written in reference to its efficiency in parenchymatous keratitis and I have obtained in a large number of cases results far better than he was able to obtain by the use of the iodide and mercury. Especially was the symptoms of pain and photophobia speedily relieved and a rapid improvement was noted in almost every case, but only after three or four injections had been given. Neosalvarsan is by no means so efficacious.

The question of sympathetic ophthalmia, that dark page in ophthalmic literature, has also received some mention in ophthalmic discussions. Observers are still divided as to the genesis of this affection. F. Deutschmann has brought forward some other experiments to show that the theory of Leber and R. Deutschmann is correct. He believes that it is a migratory ophthalmia dependent upon the passage of the Gram-positive diplococcus to the sound eye by the route of the optic nerves and chiasm. It will be some time before this theory is universally accepted.

Many new instruments have been devised during the last year, but most of them are only modifications of other old instruments. Nelson Black in modifying the

perimeter with electric lights has done a good service for ophthalmologists. A lid elevator devised by W. A. Fischer of Chicago is a most handy little instrument.

During the last year several noted ophthalmologists have died. Among these were Mr. Henry Eales of Birmingham, Eng.; Dr. John Green of St. Louis, Mo., who was one of the pioneer workers in ophthalmology in the United States; Dr. D. W. Green of Dayton, O., who advocated more than any other man in America the so-called Smith intra-capsulor operation for cataract; Jonathan Hutchinson of London, surgeon, dermatologist and ophthalmologist, probably the most versatile medical man in all the medical profession. The term "Hutchinson's teeth" will always mark him to have been one of the keenest observers among medical men and the value of this symptom to syphilographers is of extreme value; Ernest Motais, the French ophthalmologist, who was well known as the originator of the Motais operation for ptosis; Edward Nettleship of London, whose text-book on Ophthalmology has held a prominent place for years in medical literature, and Henry R. Swanzy of Dublin, Ireland, whose book is also well known.

MEDICINE WITH ESPECIAL REFERENCE TO THERAPEUTICS IN 1914.

REYNOLD WEBB WILCOX, M.D., LL.D.,

FORMERLY PROFESSOR OF MEDICINE AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

New York.

The year which has closed has been marked by no discovery which may be designated as epoch-making in medicine, but, nevertheless, substantial progress has been made in directions which are too numerous to be detailed in a brief report. Their catalogue without comment would be barren of results, yet practical medicine has recorded substantial progress all along the line and recognition of this is essential for one who would fairly appreciate the present status of the healing art-science. How far reaching these advances may be in that they may open up new vistas is not yet to be determined, but it does not seem that any are so fundamentally radical that we shall be obliged to recast our medical theories or classification in the large.

Exception might be taken to this statement in the presentation of anoci-association, the result of years of patient experimental and clinical investigation which has been brought to practical application by Crile in this year. Concluding that the essential lesion of shock is in the brain cells in which potential is changed into kinetic energy, probably at the expense of stored chemical compounds and that this stored energy is discharged in response to a stimulus, traumatic or emotional, he postulates that local anaesthesia by intercepting or short-circuiting this stimulus prevents or lessens the phenomena which collectively is denominated as shock. The local, combined with general anaesthesia, constitutes what is termed anoci-association. The possession of the means whereby we may lessen or obviate shock does not in the least remove the responsibility for making an accurate diagnosis nor for perfection of technic, nor for rapidity of work. In other words, the cause must be first as earnestly sought for and quite as rigorously excluded. Perhaps the simplest exposition of the practical side of this subject is that of Frank. Premising, that anoci-association arrests subconscious feeling, from fifteen to thirty minutes before the expected need, an hypodermatic injection of morphine, morphine and atropine, morphine and scopolamine, or morphine alone, is administered. Gas-oxygen anaesthesia follows. The line of incision is injected with an one-fourth of one per cent. solution novacaine, which should be well distributed by pressure, before the incision is made. One-half to one per cent. solution of quinine urea-hydrochloride is employed in continuance of the procedure and the general planes of closure are likewise injected, and finally this is carried well beyond the immediate field of operation. The theory is to prevent the loss of vital force from stimulation of brain cells through either the sensory or psychic system, and practical results bear out the theory as well as prove the value of its application.

In marked contrast to the scholarly investigation and dignified presentation of anoci-association, is the flamboyant exploitation of the dämmerschlaf, not that this may be an immense gain to obstetric therapeutics, but the very mode of its promotion excites suspicion and provokes criticism. Notwithstanding all this, careful investigation has shown that a method twice tried and abandoned has at last secured a legitimate place in medicine—its dangers in the prolongation of the second stage of labor, although somewhat offset by its shortening of the first, and its necessary disturbance of the child, must be guarded against by extreme care in its employment. The chemistry of the mydriatic alkaloids found in or developed from the *Solandelaceae* is still far from resting upon a sound basis and, while the single dose of morphine (one-sixth of a grain) or of narcophin (one-half of a grain) is usually perfectly safe, the amount of scopolamine (one one-hundred and fiftieth of a grain) which must be repeated so that its physiological effect shall be continuous, because an interruption of complete consciousness spells recollection of pain and a reconstruction of the entire course of the labor, introduces an element of danger which is difficult to be completely eliminated. On the side of the mother atonic post partum haemorrhage and prolonged labor; for the child, asphyxia and death, the latter very remotely possible, are dangers to be considered. So long as the actual amount of scopolamine is not determinable and the personal equation of the mother cannot be accurately estimated, the establishment of amnesia and its persistence must be the guide in the administration of the drug. Success in this method demands (1) a high degree of technical knowledge of the physiological effects of scopolamine in general and a special knowledge of the patient in particular, (2) a marked degree of technical obstetrical skill, and (3) uninterrupted attendance on the part of the physician during labor and absolute attention to details of administration. With these limitations the method constitutes a real advance in therapeutics.

In pure therapeutics the sensitized vaccines of Besredka constitute an important addition to our resources. The principle involved is that every cell brought into contact with the antibody fixes this antibody to the exclusion of all else. In preparation, the vaccine is brought into contact with an homologous immune serum, the bacteria become coated with specific antibodies and having been centrifuged out are then treated as in the preparation of the usual vaccines. In practice it is believed that the constitution reaction is eliminated, the production of immunity accelerated, and this immunity is acquired without deminution of the specific resistance of the subject.

This year has witnessed the solution of some problems in causation. Veruga Peruvianesis or Carrion's disease, has been studied by Strong, Tyzzer and others, who have found a microorganism, parasitic in the blood

corpuscles of man, which is intermediate between the protozoa and bacteria, as the spirochetes form another such group, and to which the name *bacteria bacilliformis* has been given. As the disease is likely to spread beyond its habitat, any real knowledge of Oroya fever is welcome. The isolation of the virus of poliomyelitis by Flexner and Noguchi opens a new and hopeful outlook in the treatment of this perplexing condition. The enzyme diagnosis of Abderhalden, which depends upon the principle that the access of a foreign protein to the blood will occasion the formation of a specific ferment in the organism which will dissolve that protein and no others, has received much attention and has been in general confirmed and at the same time its sphere of action has been widened, and that its application to the diagnosis of many other conditions than the original one of pregnancy may be postulated.

In those patients who present symptoms resembling those of enteric fever, but whose blood does not respond to the serological or cultural tests for the typhoid bacillus the diagnosis of entericoid fever is allowed. The real significance of this is being gradually cleared in attributing to this condition as causative agents the different strains of organisms of the paratyphoid group and to others morphologically similar, as, for instance, Gärtner's *bacillus enteritisis*. In this connection a neglected field for the experimental worker suggests itself; the search for scientific reasons for accepted facts of clinical observation—for instance, the symptoms and therapeutics of malarial fever have been known for three centuries, scientific investigation of cause and transmission, of cause, and treatment have placed our empirical knowledge upon a firm basis. An instance of the work done during the year is noteworthy. The sequence of tonsillitis, acute infectious arthritis (rheumatism) and endocarditis is a clinical observation of the supervention of one type of infection upon another. Rosenau, working upon bases established by Thiele and Embertan, has studied the transmutation of species of bacteria of the streptococcus-pneumococcus group and has found that environment, as represented by varying cultural conditions, will produce variations of bacterial species within a comparatively short time, different mutants showing marked affinity for certain tissues, one form localizing in the joints, another in muscles or in the structures of the heart. The treatment of dysentery is satisfactory from a therapeutic standpoint. The difficulties of the treatment of entamœbic varieties by ipecacuanha which originated in the East Indies has been overcome by the substitution of ametine employed subcutaneously in doses of from two to three grains, repeated in the smaller amount at two or three days' interval. This is not only curative as to the dysentery, but the entamœbic hepatitis as well, and possibly of the hepatic abscess, and in addition is a diagnostic test in instances of chronic pyrexia of the tropics of uncertain origin and accompanied by leucocytosis. Although some benefit has been recorded from the use of antidysenteric serum in bacillary dysentery, the results are often not so striking and there exists some danger from anaphylaxis.

Antitetanic serum is now reducing the hitherto appalling mortality from tetanus. The *crux* of the matter is the recognition of the fact that so soon as the toxin becomes localized in the neurons, intraspinal injection is necessary, and that larger doses are necessary. In severe types it should also be given intravenously; a preliminary small dose (ten units) may safeguard the patient from shock. An hour later five thousand units may be injected and repeated at twelve-hour intervals. An injection of magnesium sulphate into the spinal canal usually promptly relieves pain.

The use of massive doses of arsenic, particularly of salvarsan and neosalvarsan, in perfected technic and with sound discretion, has achieved brilliant results, more particularly in the earlier stages of syphilis. Apparently the use of mercury is advisable as a succedamum and to a lesser extent that of the iodides, particularly as the use of the Wassermann test as a criterion of diagnosis has raised our standard of complete cure. Much encouragement is found in tabes dorsalis in that we believe the progress of the disease may be checked by intra-spinal or intravenous injections, or both combined, of salvarsan or neosalvarsan coincident with mercury by deep intramuscular injections of mercury. Here the spinal fluid must be studied until it is proved to be free from evidences of syphilis. This method certainly prevents the gastric crises.

Chronic intestinal stasis still occupies the professional attention, and much real advance, especially in therapeutics, has been recorded. Whether we shall accept the contentions of Lane in their entirety remains to be determined; it is especially problematical if all the mechanical procedures are to be carried out with the frequency which some surgeons seem to demand. It is also doubtful if it shall become necessary to so radically revise our medical nosology as has been suggested. At all events the appreciation of the toxæmia resulting directly or indirectly from intestinal stases is in the line of progress, and the same may be said of its management.

High blood pressure is another favorite subject for the physician. Recent work tends to show its relation to arteriosclerosis and the causes of the latter, and rational treatment has been correspondingly advanced. The sphygmomanometer, in the opinion of advanced clinicians, is simply an instrument of precision in the same sense as in the clinical thermometer. Starting from this statement, neither instrument determines the treatment, its readings being alone considered, but only as one agency which in conjunction with many others, will lead to a diagnosis correct in fact and as well pregnant in therapeutic suggestion.

The intensive investigation of pelagra in its habitat is progressing favorably, but without definite result as yet. The investigators are capable, though, and persistent, and we trust before our next report that much which is now obscure will be known and nothing unknowable will remain.

Internal medicine is slowly but surely progressing toward scientific completion, not only placing itself upon a sound basis, but contributing much to other departments of the healing art: while many of the minor advances, which space forbids even their enumeration, may, if carried to their logical conclusion, markedly alter our medical conceptions. Even if taken at our present estimate, in this year 1914, our resources have increased and our usefulness to the world has been correspondingly enhanced.

679 Madison avenue.

The most modern and satisfactory operation for extreme descent of the uterus is undoubtedly the Dührssen-Watkins-Wertheim anterior transposition operation, which consists in placing the fundus beneath the bladder in extreme anteversion and making a high restoration of the rectal vaginal septum.

Scoliosis is very commonly associated with cervical rib.

THE PROGRESS IN GYNECOLOGY DURING 1914.

JOHN OSBORN POLAK, M.Sc., M.D., F.A.C.S.
Brooklyn, N. Y.

A careful review of the many contributions which have been made to the subject of gynecology during the past year shows that several questions of vital interest to the gynecic surgeon still remain unsettled, these include the treatment of uterine cancer, of uterine hemorrhage, of pelvic prolapse and of retro-deviations of the uterus. While the clinical man has been striving for a solution of these practical questions, the laboratory man is delving into the physiology of the internal secretions and their relation to the control of the processes of ovulation, menstruation and the nutrition of the ovum.

Perhaps the greatest advance has been made in the treatment of cancer of the cervix in the early stages by the application of radium and by the perfected operation of Wertheim as modified by Childe and Werder. These investigators have extended the application of the electric or thermo cautery to the control of hemorrhage and lymphatic invasion of the parametrium. Their procedure greatly simplifies the complete operation. Childe makes a two-stage operation by excision and cauterization of the involved cervix as a preliminary procedure the week previous to radical extirpation. Werder does it at the same sitting. The vagina is then sterilized with iodin and packed with iodoform gauze and the abdominal stage begun as in the Wertheim operation. After the ureters are isolated and drawn out of harm's way, the uterines are tied close to the pelvic wall and the vagina dissected free, the parametrium on each side, well out toward the pelvic wall, is seized in strong crushing clamps, which are left on until the close of the operation, and the uterus and parametrium on the proximal side is cut away with the cautery. Werder uses the Downs electric angiotribe by which he slowly cooks the tissues within its grasp. This operation simplifies the most difficult stage of the radical procedure by controlling hemorrhage in the parametrium without the application of numberless ligatures. Clamping and cauterizing is a safe hemostatic, and the cancer cells in the cut edges are destroyed and lymphatic invasion checked.

In inoperable cancer Percy has called attention to the value of the dissemination of heat in the gross cancer mass vs. cauterization as advocated by Byrne in 1891. The cancer cell is destroyed when the temperature is raised to 50-55° C., while the vitality of the normal tissues is not changed until the temperature exceeds 55-60° C. Heat seals the lymphatics and prevents the extension of metastases—while the knife and curette tend to spread them—hence Percy uses an electric heating iron, through a water-cooled speculum. This is plunged into the cancer mass and an even heat maintained for ten or twenty minutes when the cancer cells are destroyed—injury to the surrounding viscera is guarded against by the guidance of an assistant with his hand in the abdomen grasping the uterus. In large masses repeated exposures may be necessary. During the past year radium, mesothoreum and the *x*-ray have gained more definite recogintion in the treatment of cancer. Kroenig, Döderlein and Gauss advocate their use in beginning carcinoma of the cervix and body, and practically do not operate for cancer. All authorities are agreed as to the value of pre and postoperative irradiation. Dobbert from an experience of thirty-one cases of cervical cancer treated with radium by cross-firing through the application of three tubes containing approximately fifty milligrams each, for periods of from twelve to twenty-four hours, draws the following conclusions:

1. Beginning cervical carcinomata may be treated with radium before operation.
2. In more advanced cases, because of the uncertainty of radium, radical operation is to be preferred; radium has a destructive predilection for certain forms of cancer cells.
3. Inoperable cancers offer the best field for radium therapy.
4. Very far advanced cases are not adapted to radium treatment.

Pain and hemmorhage are always favorably influenced by radiation by radium. Uterine hemorrhage both from its pathologic physiology and treatment has received much attention.

Novak claims that menstruation and the physiological phenomena of this act should be the starting point in a study of the causes of pathological bleeding, and states that the factors concerned in normal menstruation are (a) an ultimate cause situated in the ductless gland chain, of which the ovary is the most important; (b) a nervous mechanism essentially vaso-motor in character; (c) the pelvic organs, particularly the uterus and its lining membrane.

Therefore all anomalous uterine bleedings may be grouped as:

1. Fundamental, due to disturbances of the internal secretions.
2. Nervous, exerting their effect mainly through the vaso-motor nerves, including changes in vascular tension.
3. Anatomical, in which there are structure changes present in the uterus or other pelvic organs.

Kelly and Burham evidently do not share these views and divide pathologic uterine bleeding exclusive of cancer into four groups:

1. Bleeding uteri without demonstrable lesions, the so-called myopathica hemorrhagica.
2. Bleeding uteri in young girls, the cause of which may not be demonstrable or may be from polypoid changes in the endometrium from chronic stasis.
3. Bleeding uteri from a polypoid endometrium, *i. e.*, so-called polypoid endometritis, hyperplasia of the mucosa due to venous engorgement.
4. Bleeding myomatous uteri.

All these groups have received radium treatment and from an analysis of these results, they conclude that radium completely and permanently controls uterine hemorrhage—the rays have a specific and direct action upon fibroid tumors causing them to disappear completely or to become greatly reduced in size. Radium does not destroy the ovaries. Radium can bring about a complete amenorrhœa at any age, and the menopausal symptoms which follow the amenorrhœa are less severe in all and absent, in about fifty per cent. of the cases treated with radium. Intra-uterine radiation is the method of choice. The trend of most observers is to use the ***highest possible dosage of radium in a unit of time*** so long as this is possible without burning the healthy tissues—little can be accomplished with less than 150 mg. Small dosage stimulates the growth.

New operations have been suggested for prolapse—retroversion and suppuration salpingitis in young women.

Nadory recommends the implantation of two strips of the fascia lata beneath the mucosa of the vagina

crossing posteriorly and encircling the vaginal wall, thus narrowing the lumen—the suggestion is ingenious, though it lacks value as a curative measure. Lenormant and Pettit Dutailles cure prolapse by high amputation of the cervix and colpectomy of the anterior vaginal wall and a posterior colpoperinorrhaphy—the operation, unfortunately, shortens the anterior vaginal wall which necessarily tends to retrovert the uterus and favor recurrence of the prolapse.

Guthrie and Whiteis cure prolapse in women past the menopause without adnexal disease or uterine tumor formation by a permanent fixation of the body and fundus in the lower angle of the abdominal incision by uniting the parietal to the uterine peritoneum in the upper portion of the wound, the recti are closed behind it and then the body is pressed backward onto the united recti and the fascia closed in front of it—the sutures penetrating the uterine substance. The whole body of the uterus may be brought outside of the recti muscles. Somewhat similar operations have been previously practiced by P. Harris and J. B. Murphy with satisfactory results in a certain limited class of cases.

Nyolassy calls attention to the importance of carrying the utero-pelvic ligaments in front of the cervix in procedures intended for the cure of prolapse. His technique consists of a supra pubic abdominal coeliotomy. The bladder is freed from the uterus, the cardinal ligaments (utero-pelvic) exposed and dissected off the posterior layer of the broad ligaments and looped on the anterior wall of the uterus and sutured with silk to the uterus. A loop is made in each round ligament to correct the retroversion and the peritoneal flap brought over and closed with catgut sutures.

Jellett, Grad, Kelly and Noble all use some method of shortening the utero-sacral ligaments to gain the same advantage, *i. e.*, to keep the cervix high in the pelvis and pointing back toward the sacrum. All of these procedures need a strong pelvic floor support to give permanent results.

Cuthbertson has modified the Gilliam operation by passing a strip of the external oblique fascia through the two arms of the loop of the ligament. The strip is then drawn down into place and sutured. He thinks by this procedure that the integrity of the ligament is better conserved than by passing sutures through it and thus interfering with its circulation.

Byford has suggested an internal modification of the Alexander operation which can be used in retroversion when intra-abdominal lesions make a celiotomy necessary. He describes the steps as follows: 'After having completed the intra-abdominal work for other conditions, the round ligament is grasped by forceps and pulled out of the inguinal canal until it becomes taut. It is then transfixed by a needle threaded with fine chronic catgut at a point about one c.m. from the internal ring and again at about three or four c.m. from the uterine end and the thread tied so as to make a loop of ligament. The sides of the loop are then sutured with fine catgut forming a sort of double cord. The same is done with the round ligament on the other side and the parts palpated to determine, while there is still time to correct an error in judgment, whether the amount of shortening has been sufficient or excessive.

The peritoneum is next separated freely from the abdominal wall low down on one side of the incision as far laterally as the internal inguinal ring. There is practically no resulting bleeding and by inserting a short retractor between the peritoneum and the rectus muscle one can raise the abdominal wall and do the subsequent work with the aid of sight and touch. With a slender, slightly curved pair of snap forceps a puncture from without inward is made in the peritoneal membrane near the internal inguinal ring, and the end of the loop of ligament pulled through the puncture hole until the sutured portion of the ligament is *all extra peritoneal.* The loop is now given a half twist on itself and with a curved needle and permanent suture passed through the sides of the loop a centimeter from its base, is sutured to the inner surface of the abdominal wall as near the internal ring as possible without danger of puncturing the epigastric artery. The loop of ligament which is practically a short double cord, can now be horizontally sutured along the abdominal wall with as many or as few absorbable sutures as may seem advisable for the production of adequate adhesions. The abdomen is then closed in layers."

Vaginal amputation of the body of the uterus for sterilization in tuberculosis and for intractable hemorrhage from the uterus, not of myomatous or cancerous origin, has been extensively practiced by Lölnberg, Jung and Rieck. The advantages claimed are that the procedure is almost completely extra peritoneal, therefore shock is avoided—that the integrity of the vagina is maintained, and that the convalescence is short and smooth. The reviewer has used the above procedure for sterilization in young women with tuberculosis. It may be readily done under spinal anesthesia and enough endometrium preserved to insure the recurrence of menstruation, which is sometimes of advantage for its psychic effect.

Bell and Beuttner excise a wedge-shaped portion of the fundus uteri for suppurative salpingitis in young women and thus preserve the menstrual function without leaving the infected myometrium that surrounds the uterine ostia of the tubes and results in a permanent round cell infiltration of the musculature. The technique is as follows: The right tube is freed by cutting through the meso-salpinx of that side. Next the left tube and ovary are freed by cutting through the broad ligament at the junction of the meso-salpinx and meso-ovarian up to the uterus. A wedge-shaped portion of the fundus is then excised by means of two incisions, one of which is carried across the anterior surface of the fundus and the other across the fundus posteriorly. These incisions meet on the lateral walls of the uterus about half an inch below the tubes. The anterior incision cuts through the insertions of the round ligaments. These two incisions are deepened, the anterior downwards and backwards and the posterior downwards and forwards, until they meet in the center of the uterus. The ascending branches of the uterine are caught and tied, as are the other vessels in the broad ligaments when they are cut through. The wedge-shaped opening in the uterus is closed by mattress sutures which controls the bleeding and the cut peritoneal edges approximated across the pelvis by a continuous suture of running catgut. Finally, the round ligaments are attached to the stump and their insertion peritonealized. The right ovary may be suspended from the round ligament on that side and thus prevent ovarian prolapse. Both ovaries may be retained when not the seat of pathologic lesion.

287 Clinton Ave.

Heavy doses of arsenic are of value in purpura.

Trichloracetic acid can be advantageously used on all superficial epidermic growths.

REVIEW OF SYPHILOLOGY AND DERMATOLOGY.

EDWARD H. MARSH, M. D.,
ASSOCIATE DERMATOLOGIST, JEWISH HOSPITAL OF BROOKLYN; ASSISTANT SURGEON IN DERMATOLOGY, CORNELL UNIVERSITY MEDICAL COLLEGE DISPENSARY; ASSISTANT SURGEON, HOUSE OF RELIEF, O. P. D., G. U. DEPT.
Brooklyn, N. Y.

Syphilis.

The progress in the last year in the study of syphilis has been directed largely toward laboratory diagnostic methods and improved therapeutic technic, particularly that of the cerebro-spinal nervous system.

The Noguchi luetin test has been worked out by many observers and their results recorded. Kilgore[1] reports the test is valueless in primary and secondary (untreated) syphilis; it is of value only in the later stages. His report contains the results of twenty-five observers in over fifteen hundred cases of syphilis and in 2,000 control cases. The percentage of positive reactions is as follows: Tertiary and latent, 65-100 per cent.; congenital, 10-96 per cent.; cerebro spinal, 30-80 per cent.

When positive the reaction is highly specific for syphilis. In 2,000 controls only fourteen were positive and it was impossible to determine whether some of these may not have had syphilis. The chief value of the test lies in the few cases in which the Wassermann reaction is negative.

The types of reaction were as follows:

(1) Papular: The papule usually appears in from 24-48 hours; there is a diffuse redness with central induration, gradually increasing in size during the next four to six days until it attains a diameter of from 10 to 20 mm; it gradually fades during the next few days, although at times it is still evident after 30 days.

(2) Pustular: The papule may become pustular and in some instances hemorrhagic.

(3) Seen rarely is a type characterized by the appearance within 24-48 hours of a light purplish or violet areola 35-40 mm in diameter around a slightly red papule; this fades in 2 or 3 days and the central papule becomes harder and larger and runs the course of the ordinary papule.

McNeil[2] reports some anomalies: (1) delayed reaction, the site of the reaction remaining normal for ten days when a marked pustular reaction appeared. (2) He had two negative reactions in typical clinical cases; after vigorous mercurial treatment for six days a second reaction was positive and a positive reaction also occurred at the site of the first injection.

That repeated Wassermann tests are imperative is demonstrated by the work of Craig,[3] who made daily tests for seven consecutive days on a series of ten cases of syphilis, comprising primary, secondary, and latent cases. Only two which were of the florid secondary type, gave the same result on all occasions. Two, one secondary and one latent, gave results which varied from negative to strongly positive.

In regard to symptomology of syphilis, Wile[4] discusses joint manifestations of secondary syphilis, which he divides into three groups following the classification of Fournier, Hutchinson and Morestin, as follows: (1) Simple arthralgia which is frequently met with; (2) Hydrarthrosis which is characterized by a painless serous effusion; (3) Pseudo rhematic arthropathy (Fournier) in which one may find a low grade of fever but no sweats. Wile believes that the second form is of far greater frequency than is generally recognized.

Stern[4] claims, from the standpoint of the internist that fully 50 per cent. of syphilis develops without secondary manifestations and runs its course as an internal disease. Antisyphilitic therapy has made great strides. Nelson[5] and Haines of the U. S. Army Medical Corps have given us probably the best tables of comparative results in the use of salvarsan and neosalvarsan. Their work was done at the U. S. Military Prison at Fort Leavenworth, where their patients were under the most careful observation and their conclusions are of proportionate value.

They had under treatment 108 cases who received a total of 340 injections of neosalvarsan. Of these cases there were 68 in which the serum tests were done by one officer in the service, Craig, who also had previously treated a series of cases with salvarsan, and had done all the serum tests in that series. These 68 cases all received five injections of neosalvarsan combined with vigorous mercurial treatment. The results are tabled as follows:

	Number of cases.	Number remaining positive.	Per cent.
Primary	5	5	100
Secondary	53	34	64.6
Tertiary	2	1	50
Latent	8	5	62.5
Total	68	45	66.7

The best results were in those cases showing a weakly positive Wassermann reaction. The primary cases, however, never became positive. In the literature on the subject of salvarsan it is agreed by all authors that the best results have been in the primary cases.

Compared with Craig's[6] results they point out that only 42.4 per cent. of his cases remained positive after one injection of salvarsan and that all of his 288 cases became negative after eight injections of salvarsan at weekly intervals.

Their conclusions are that five injections of neosalvarsan combined with vigorous mercurial treatment have failed to show as good results, as shown by the serum reactions, as did one dose of salvarsan; in order to "cure" 70-80 per cent. of their cases it would be necessary to use from four to five times as much neosalvarsan as salvarsan.

Gennerich[7] gives his results with salvarsan in 1,200 cases, all of whom he had under observation for at least one year after treatment was stopped. There were two deaths in the series, one from embolus and one from ulcerative enteritis. There was no disturbance of vision or hearing in any instance. The greatest progress was made in aborting the disease. In his experience this may be done in six months and 94-97 per cent. are durable. Seventeen of the men contracted the disease anew in from three months to three years after all tests had shown them to be cured.

Analysis of the mishaps with salvarsan shows that they are avoidable. The dose should be reasonable and it should never be administered to those who have cardio-vascular injury, kidney disease, chronic alcoholism, nicotinism, or plumbism, or infectious disease other than syphlis. According to Luithlen[8] salvarsan should never be given in the secondary stage of syphilis.

Thomas and Moorhead[9] report two interesting reactions following the administration of neosalvarsan. The first case developed a severe dermatitis exfoliativa, the second a papulo-squamous eczema.

Wile[10] uses a direct solution of neosalvarsan in water in the intra-spinal treatment of syphilis in place of the salvarsanized serum of Swift and Ellis. The solution is 6 per cent. neosalvarsan in distilled water. This is hypertonic and of such concentration that each minim

contains 3 mg. of the drug. The dosage employed is from 3 to 12 mg., that is from 1 to 4 drops. The patient is placed in position for lumbar puncture which is made with a needle which fits on the syringe used. After a few drops of spinal fluid have flowed out, the syringe containing the neosalvarsan is fitted to the needle and the fluid is allowed to flow back, thus mixing with the drug. The mixture is then gently forced into the canal and slight suction made which draws out a second slight amount of fluid which is re-injected, thus washing out the needle. Patient is placed in the Trendelenburg position for one hour.

Wile has treated fifteen patients in this manner with a total of twenty-five injections. Two died, seven were markedly improved, three received only one injection and showed no change in their condition, one patient improved but relapsed, one improved with respect to occulo-motor palsey, but showed progression of the spinal feature of the disease.

Corbus[11] records good results employing the Swift-Ellis technic, but finds the Wile method too dangerous. He makes a plea for more general spinal fluid examination in syphilis.

Fordyce[12] reviews the literature on the subject of syphilis of the nervous system emphasizing the following points: (1) Accurate diagnosis with serologic findings: (2) necessity of prolonged treatment; (3) avoidance of too large initial dosage; (4) persistence in treatment. He describes the method of Ogilvie for intra-spinal treatment.

Fifty c.c. of blood are withdrawn and centrifuged twice. Old salvarsan is mixed in the usual way 0.1 gm. to 40 c.c. of fluid, care being taken not to over-alkalinize; 0.4 c.c. of this solution contains 1 mg. of salvarsan and is the standard for measuring dosage. For this purpose a 1 c.c. pipet graduated in hundredths is used. The desired amount of salvarsan is added to 12 to 15 c.c. of the serum, mixed thoroughly and then placed in the incubator at 37 deg. C. for one hour, after which it is inactivated for one-half hour at 56 deg. C. The latter is most important, as Swift and Ellis demonstrated that the spirocheticidal properties of the serum were markedly increased by heating.

Salvarsanized serum prepared according to the above method must be used within three hours after its preparation. A lumbar puncture is made and an amount of fluid equivalent to the amount of serum to be injected, is withdrawn. The serum is allowed to flow in by gravity.

The limit of safety in dosage lies within 0.5 mg.; it is better to begin with 0.25 mg., repeating or increasing according to the tolerance of the patient. Intervals should be two weeks or longer.

Salvarsan is used almost entirely. It has been shown by Stühmer[13] that owing to its quicker elimination the action of neosalvarsan is much shorter than salvarsan. While the maximum effect is produced within the first twenty-four hours in either case, it practically ceases on the second day in the case of neosalvarsan, whereas in the case of salvarsan he still found traces at the end of a week.

Fordyce believes that until we are more familiar with the effects of serum fortified in vitro, the Swift-Ellis method of salvarsanizing serum in vivo should be the method of choice. In certain cases the serum from the patient so treated may be reinforced with from 0.25 to 0.5 mg. of salvarasn.

Dermatology.

To review all the important papers and case reports published in the past year would be an endless task. I shall therefore confine myself to a very few which may be of interest to the readers of the MEDICAL TIMES.

Gottheil[14] and Satenstein report further on their experience with autoserum treatment in various dermatoses. They briefly review the work of others along this line.

Veiel[15] records a case of herpes gestationis, resisting all treatment, to whom he administered the serum of a healthy gravida with temporary improvement. After a second injection of twice the amount used at first, there was marked improvement. Rübsamen[16] reports two cases, one pruritus, due to pregnancy, the other a herpes gestationis, both of whom were cured by the injection of the serum of a healthy gravida. Rongy[17] recorded good results in pruritus of pregnancy by the same means. Pretorius[18] records a case of pemphigus to whom was given 20 c.c. of blood from her husband; cure resulted in eight days, and no relapse was noted in the next eight months. Spiethoff[19] records good results in dermatitis herpetiformis, chronic urticaria, prurigo, psoriasis, and chronic eczema from autoserum treatment. Ullmann[20] used autoserum injections in eighteen itchy dermatoses without other treatment. Seven cases of dermatitis herpetiformis were not benefitted; two cases of extensive eczema in children were unimproved until local treatment was instituted; three urticarias were improved but not cured; four cases of pruritus were cured; one prurigo was much improved.

Gottheil has used the treatment in twenty-five cases, and reports eighteen cases in his private practice. His method is to withdraw about 200 c.c. of blood into four 60 c.c. centrifuged tubes; the blood is allowed to clot: the clot is then broken up and the serum is centrifuged at high speed (5,000 r. p. m.) for from thirty to forty minutes. Usually it is possible to recover about 40 to 45 per cent. of the serum.

He has given two hundred and fifty injections without seeing any contra-indications. Only one case showed any reaction, which consisted of chills and fever coming on following the fifth and sixth injections. Other cases immediately resumed their ordinary occupations.

The cases reported comprise twelve psoriasis, two radio-dermatitis, one each of furunculosis, pustular acne, dermic abscess, chronic urticaria, and lichen planus.

The acne showed marked improvement; the cases of urticaria, lichen planus, and furunculosis became much better. One case of radiodermatitis which was gangranous showed astounding improvement. The results in psoriasis were uniform and extremely satisfactory. The cases received from four to six injections at intervals of from five days to one week. No local treatment was employed during this time except soap and water baths. In most cases the efflorescence became paler, less elevated, and showed distinct signs of retrogression. At the end of the serum course, weak chrysarobin or white precipitate ointment was used locally. In from three to eight days every lesion had disappeared. Some of the patients had had large indurated placques of years standing and had been treated with 40 per cent. chrysarobin ointment and arsenic internally in large doses without benefit.

Cole[21] and Rule report an epidemic of nine cases of pemphigoid of the new-born. The staphylococcus aureus was cultivated in pure culture in all cases in which unbroken vesicles could be found. The first case developed a bacteremia and died on the twelfth day of the disease; in the other cases the use of autogenous vaccines gave prompt results.

Sutton[22] reports five cases of sporotrichosis, which makes a total of reported cases in the United States seventy-three; of these sixty-eight became infected while residing in the region comprising the Mississippi basin.

The field work in the study of pellagra in the vicinity of Spartanburg, S. C., is reported fully by Siler,[23] Garrison and MacNeal. The disease seems to be most extensive in villages with a large population of mill workers; it is more prevalent in the adult white females who are occupied in housework. In 85 per cent. of the cases the economic conditions are poor. Previous illness was determined in a large percentage of the cases. The absence of properly constructed privies and the absence of effective screening of houses was noted.

Jennings and King of the U. S. Department of Agriculture pursued the study of insects as possible carriers of the disease. Of all the insects investigated only the house fly and stable fly are possible. The latter is the more probable. The range of the species covers and exceeds that of pellagra; the seasonal activity is coincident with that of pellagra; it is more abundant in rural communities as is pellagra; it bites by day, thus explaining the sex incidence; it is intimately associated with man and infests his vicinity and dwellings; its longevity is sufficient for the development of an hypothetical causative organism; it is frequently carried long distances and might thus account for the occurrence of sporadic cases.

Brengle[24] reports four cases of pellagra in Minnesota.

Hess[25] has studied the blood in German measles and finds a definite lymphocytosis preceding the appearance of the exanthem. This may serve to differentiate rubella from scarlet fever, which is associated with a polymorphonuclear increase in the early stage.

Much has been written of the value of radium in the treatment of roden ulcer and superficial epithelioma. It may be of some value in these conditions, but it is only one more therapeutic measure to add to those which we already possess, and it would seem to have no particular advantage over the older methods of treating the above conditions. For the more malignant types of epithelioma there is but one hope and that is the surgeon's knife.

Bibliography.

[1] Kilgore, *Jour. A. M. A.*, LXII, p. 1236.
[2] McNeil, ibid., p. 529.
[3] Craig, ibid., p. 1234.
[4] Stern, *Deutsche medizinische Wochenschrift*, XL, 9.
[5] Nelson and Haines, *J. A. M. A.*, LXII, March 28, 1914.
[6] Craig, Bulletin No. 3, Surg. Gen'l Office, June, 1913.
[7] *Jour. Cut. Dis.*, Jan., 1914.
[8] Gennerich, *Münchener medizinische Wochenschrift*, XL, 10, 1914.
[9] Luithlen, *Therapeutische Monatschefte*, Berlin, XXVIII, 1.
[10] Thomas and Moorhead, *Jour. A. M. A.*, LXII, 608.
[11] Wile, *Jour. A. M. A.*, LXIII, July 11, 1914.
[12] Corbus, ibid, p. 550.
[13] Fordyce, ibid., Aug. 15, 1914.
[14] Stühmer, *München med. Wchnschr.*, 1914, No. 14.
[15] Gottheil and Satenstein, *J. A. M. A.*, XLIII, Oct. 3, 1914.
[16] Veiel, *München med. Wchschr.*, 1912, No. 35.
[17] Rubsamen, *Deutsche med. Wchschr.*, 1913, No. 20.
[18] Rongy, *New York State Jour. Med.*, Jan., 1914.
[19] Pretorius, *München med. Wochschr.*, 1913, No. 16.
[20] Spiethoff, *Deutsche med. Wchschr.*, Oct. 18, 1913.
[21] Ullmann, *Arch. f. Dermat.*, Sept., 1913.
[22] Cole and Ruth, *Jour. A. M. A.*, LXIII, Oct. 3, 1914.
[23] Sutton, ibid.
[24] Siler, Garrison, McNeil, *Jour. A. M. A.*, LXII, No. 9, 1914.
[25] Brengle, *Jour. A. M. A.*, LXIII, Oct. 3, 1914.
[26] Hess, *Archives of Internal Medicine*, XIII, June, 1914.

448 Ninth St.

Medical Editorial Table

America's Medical Opportunity.

Many of the large number of American medical men who had anticipated taking courses this year in Germany or Austria will turn now to the medical centers of their own country for instruction, and it is not unlikely that many will come to us from Central and South America. How well are New York, Chicago, Philadelphia, Boston and Baltimore equipped to take up the work that perforce must languish in the great European universities and clinics? Of clinical material, of surgical skill, of modern hospital management and of therapeutic methods, there are ample for all to behold. But of opportunities for actual clinical work and laboratory study there are, we fear, too few; and in autopsy material we certainly lag far behind. What efforts, then, will be made in our large cities to attract and retain the students that Europe must now deny? How will our large hospitals and laboratories be opened to them? To "see America first" will, for a time at least, be a necessity. What are we going to do to make it a habit? To develop teaching develops teachers, which means the stimulation of research and the advancement of scientific medicine. This is America's medical opportunity. Are we going to grasp it?—(*American Journal of Surgery*, November, 1914.)

Levies Unfit for Warfare.

One reads in the lay press how youths and men past forty years of age are appearing on the firing line, are taken prisoners, are lying dead in the trenches. When such levies are made, the end of the war cannot be far distant. Very young men are relatively susceptible to disease, while the middle-aged and elderly are even worse off than the adolescent. Let any colleague who is himself graying at the temples, put himself in the place of the men in the trenches that gridiron and honeycomb the battle line from Ostend to Lorraine, where men are without food for days or must satisfy their hunger with bacon, beans, hard tack, and pea soup; where men who through many years of comfortable living have, come forty year, acquired undistributed middles, must now march a dozen miles a day weighed down with seventy pounds of accoutrements; where men who are inefficient after a poor night's rest must dig trenches before dawn, from which to fight without sleep the next day; where men accustomed to the morning tub are tortured by filthy, bacteria-conveying vermin; where men in whom the degenerations are becoming manifest must now fear rheumatism, the camp infections, the heart, artery, urinary and liver diseases, and the terminal affections which do for a man for good and all. Nor are the physical discomforts and diseases the worst; campaigning is disastrous to the brain and nervous system in the case of the unseasoned. Warfare is attended with peculiar physical hardships and psychic stresses. Such troops are unfit and cannot endure; they must quickly succumb to war's privations and horrors; for one dying of wounds several will die of disease. Many will go insane; many will destroy themselves.—(*N. Y. Med Jour.*, Nov. 28, 1914.)

An inflammatory paralysis or pseudo-ileus will produce symptoms akin to obstruction, because the onward passage of feces and flatus is hindered, and vomiting even of the stercoraceous type may ensue.

The Medical Times

A MONTHLY JOURNAL

OF

Medicine, Surgery, and Collateral Sciences

ESTABLISHED IN 1872

EDITED BY

H. SHERIDAN BAKETEL, A.M., M.D.

ARTHUR C. JACOBSON, M.D.,
Associate Editor.

Original articles and clinical communications will be welcomed, if given for exclusive use in this journal.

When authors furnish drawings or photographs, the publishers will have half tones and line cuts made without expense to the writers.

SUBSCRIPTION RATES:
(STRICTLY IN ADVANCE)

UNITED STATES, - - - - - - - - $1.00 per year
(Including Alaska, Cuba, Mexico, Porto Rico, Hawaiian and Philippine Islands)

CANADA, - - - - - - - - - - $1.25 per year

FOREIGN COUNTRIES IN POSTAL UNION, - - $1.50 per year

SINGLE COPIES, 15 CENTS

Definite written orders for THE MEDICAL TIMES are required from all subscribers, to whom the journal is thereafter regularly forwarded, until written notice to discontinue is sent to the publisher.

All communications should be addressed to and all checks made payable to the publishers,

MEDICAL TIMES CO.
ROMAINE PIERSON, *President and Treasurer*
H. SHERIDAN BAKETEL, *Secretary*

81 Fulton Street - - - New York

Entered as second-class matter, Post Office at New York, N. Y., Act of Congress of March 3d, 1879.

NEW YORK, JANUARY, 1915.

The Proposed Legalization of Abortion.

In a recent issue of the *New York Medical Journal* a gynecologist pleads for the legalization of the early interruption of pregnancy. Induced abortion would then cease to be criminal and "the poor woman who, through force of circumstances, finds herself incapable of caring for additional children, will find the hospital doors ready for her as well as for any other deserving patient, where, under aseptic precaution and necessary skill, she will get proper attention. The rich woman will not fear to approach the ethical surgeon who, swayed by the same motives that govern all his actions, will use proper discrimination, moral suasion whenever possible, and, as a last resort, at least render his patient proper aid, scientific services, safe from chronic invalidism or death."

It seems to us a step backward to argue in the foregoing style. Primitive peoples practised infanticide, while abortion is essentially a device of semi-civilized societies; the prevention of conception in proper circumstances is a development which we associate with highly intelligent communities. If a woman in very poor circumstances becomes pregnant every year, is it conceivable that she should be subjected to an operation for emptying the uterus that often? The results of such a system, even in the best of hands, would be gynecologically deplorable. Both the woman and the gynecologist in such a case would be feebleminded to follow such a course in the light of our present knowledge concerning contraception. To advocate anything remotely suggestive of such methods argues small wisdom. Abortion performed for pathological indications developing in the course of early pregnancy is one thing, but abortion because of "social and economic inequalities that are becoming more and more acute under the present socio-economic system" is another thing. As we understand the writer, his plea is based upon social rather than pathological grounds. Pathological indications are only occasional, and when real can be dealt with even now under the law, but socio-economic conditions are more or less continuous and ramifying, and the problem under consideration would have no end so long as they were made the criteria for abortion. It would mean, as we have said, an annual performance not justifiable from a medical standpoint. The operation of abortion is not such a small matter as to be treated so lightly. The medical man who talks in such an easy fashion about it reminds one of the physician who regards an attack of gonorrhea as a small matter—no worse than a cold in the head.

Is Continence Injurious?

Is continence injurious? This question is still being discussed assiduously. We are interested in the truth and do not think that anything ought to be conceded to prudishness. It is our conviction that continence is injurious to many people. But many things have to be accepted and practised in matter of fact ways that are injurious. It is injurious to break one's rest, but the physician must leave his bed when the call comes; we don't think about or cry over the physiological damage that results. If by the practice of continence we succeed in not blasting the happiness or impairing the social status of other individuals we ought to be able to stand for the injury. These things are all part of a decent life. Illicit sexual indulgence nearly always spells sexual exploitation, and it is a poor sophistry which attempts ever to justify the latter. Nothing is gained for the cause of the higher morality by insisting in these matters that black is white. It is immoral not to deal with facts honestly, and ineffective practically, the very object sought being nullified.

Suppose continence *is* injurious to certain people. Well, what of it? It is not the only sacrifice, not the most important cross that we have to bear. The true morality should be taught according to the principles laid down by Talmey. Do no injury to others, at no matter what cost to ourselves.

Obscure Factors in Sepsis.

Doubtless some of the sepsis for which the surgeon reproaches himself is due to more or less hidden, or undiscovered, pus foci in the patient. Crile has shown how the physical injury of an operation is augmented when there is a low threshold of resistance due to fear and other emotional causes. But fear is not the only thing to be considered. Aside from emotional causes of a lowered threshold there are certain physical causes. Is it not reasonable to suppose that such conditions as Rigg's disease, accessory sinus infections, ozena and subtonsillar disease are at the bottom of some of the sepsis? These are conditions often overlooked, and we admit that it is probably not often that they cause mischief. But that they do cause some trouble we firmly believe. An abdominal case is rushed into the hospital for immediate operation; there is no time as a rule to go into these matters; yet abscesses at the roots of the teeth not discernible except by the *x*-ray may be accountable for late trouble. Then often enough, after the trouble shows itself, the surgeon looks his patient over and finds an old otitis. It is well to bear these things in mind and as far as possible eliminate them, or, if that cannot be effected, deal with them in a manner calculated to limit their potency for harm.

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

SOME THOUGHTS ON THE GEOGRAPHY OF MEDICAL GREATNESS.

"There is one glory of the sun, and another glory of the moon, and another glory of the stars; for one star differeth from another star in glory."—I. Cor., xv:41.

If we may take the liberty of paraphrasing St. Paul's beautiful imagery for the purpose of figuratively expressing how medical greatness is affected by geographical conditions, we shall alter the words so that they will read: "There is one glory of Boston, and another glory of New York, and another glory of Baltimore, and another glory of Weissnichtwo;* for one city differeth from another city in medical glory."

The term glory in our version is used with reservations, for all that we should like to characterize in this writing is not altogether glorious. We may, with truth, say that there is also much that tends toward the inglorious, and, at times, actually attains to it.

Indeed, there has been such a surfeit of talk about the glory phase of medicine that a few remarks anent the inglorious phase may not be out of order. The writer believes, too, that it can be discussed agreeably, and, he hopes, profitably.

* * * *

When we think of Boston, medically, we think of Harvard and the Massachusetts General Hospital. They are the hubs around which medical Boston revolves. Relatively unluckly is the Boston physician who can own no affiliation with these corporations. He may be successful in a worldly sense, be a scholar and a gentleman, he may hold important institutional posts, but his sphere is an exoteric, relatively inglorious one. No great part does he play in sustaining the real palladia of Boston's medical greatness. He is a Philistine.

It is rather difficult for an outsider to understand the mystic, esoteric qualifications which a man must possess before he can aspire to a place within the sacred walls of these medical temples. The limitations of language do not permit one who is not a New Englander, much less a Bostonian, exactly to define the social and scientific sources of medical prestige in Boston.

Despite the foregoing conditions, the attainments of the scientific personnel of Boston's medical "trust" are of an astonishingly high order, as everybody knows—in the sense that there is nothing medical worth knowing that these gentlemen don't know. They know the scientific "patter" of medical science as they know the multiplication table, and they satisfy all possible requirements as regards Rabelaisian learning and impressive dignity.

One doesn't look much for anything erratic among such a personnel. One expects to find only conservatism. Occasionally, however, one encounters an individual among them who has a strangle hold on the trust as regards all the esoteric requirements for membership, and who yet exhibits phenomena strange indeed for a Bostonian of the sacred sort. Thus we see one of the near-great flying fitfully from social settlement work, applied to medicine, to psycho-therapy in conjunction with certain doctors of the church; from blood researches to denial of the trustworthiness of urinary findings as indicators of renal disease. Merely a clever, versatile man, opines the reader. Exactly, but think of the perturbing effect he must have on his staid confrères. To them, it must seem like singing the Bab Ballads to the tunes of great hymns. This man, in such an environment, is like an aberrant embryonal cell. He would be a really inspiring figure in Chicago. He is as *outré* in Boston as a typical Bostonian would be in Oshkosh.

* * * *

Members of the medical aristocracy of New York are the most fortunately situated as regards nearness to the concentrated wealth of the country. It is safe to say, too, that they are more than alive to their opportunities. He would be a unique thinker and observer who would deny that this "nearness" has had no reflex commercializing effect upon the profession.

The populace of New York probably receive more static wave thrills, at five dollars a thrill, more vibratory agitations, at five dollars per agitation, than any other neurasthenic community in the world. If you are a layman, you are irrigated for three months, subjected to vesicular massage for one month, passed along to the surgeon, who revises your table of contents, and end your days with a vacuum electrode against your prostate. Your spare time is passed visiting your relatives and friends in public hospitals and private sanatoria. People who claim to be healthy are detained at Bellevue until they promise to visit a physician. Females who do not bear upon their persons the heraldry of plastic geometry are very rare, and a child who needed no pharyngeal surgery would be entitled to a greasy effigy at the Eden Musée. Legion is the name of the neurasthenic, the sacred raven who bestows so much manna upon the Elijahs of Madison avenue. Nowhere else are his symptoms so protean, though no neurologist has, as yet, reported a fear-of-money phobia.

The writer wonders why social organizations are not founded by those who have graduated from the surgeon's hands. There is such a mania for getting up freak clubs that such organizations as are here suggested would hardly fail of success. There would be many "joiners." Besides, none could be said to have really graduated from the surgeon's hands. The real bond of union would be the common outlook, *viz.*, prospective operations. Anything short of laparotomy would entitle one to enter a kind of Blue Lodge; a brain operation would elevate one to a dignity akin to the Mystic Shriner's. Hammer toe, hemorrhoid and felon operees not eligible.

New York has more able men, absolutely and relatively, than any city in America. It is likewise true that there are more dilettanti there than anywhere else. The man who is independent of his profession, who has gone into medicine as a pastime, represents a numerous species and may be studied in large quantities in Manhattan. He affects one line of work or another and, by virtue of his social influence, secures excellent posts. If one of these characters has ever achieved anything of any moment the writer does not know it. Like Lord Roberts, who always surrounded himself with a cloud of noble but commonplace Britishers, our great hospital physicians, surgeons and teachers surround themselves with these medical dilettanti.

One of the most interesting types of practitioner in New York is the ethical advertiser. He is the greatest paradox of a profession that offers many paradoxes for the contemplation of the medical philosopher. The advent of radium has produced a faker whose sins against an afflicted community would, in a higher state

*In Weissnichtwo (a name borrowed from that of the city of Carlyle's Sartor Resartus) the reader may recognize an old familiar, for, alas! there are many Weissnichtwos.

of society, constitute indictable offences. He, too, represents a numerous species. The dilettante is negative and harmless; the ethical advertiser is a nuisance, to say the least.

Queerest of all is the medical man with a mission. This type abounds in New York. Take, for example, the man whose private life we know to have been none too good, but who, upon the platform, waxes eloquent anent the venereal peril and with tears in his voice pictures the horrors of moral delinquencies. New York is headquarters for this brand of missionary. There are a few noble men among these reformers who are actuated by sincere and earnest motives. But we are speaking of the kind of man who sees in the Society for Sanitary and Moral Prophylaxis merely a machine for the exploitation of Dr. X. This society distributes much literature and official connection with it is worth while to our missionary. His name is spread broadcast in one way and another. Representing the society, he is sent around to address church clubs. Y. M. C. A. meetings, etc. No other medical man enjoys more advertising under ethical auspices.

And we who know X well! With bated breath we listen to and look upon the figure before us, majestic in its high indignation; we chinge before the fearful imprecations which he hurls upon the moral delinquent; we weep as he pronounces a Jeremiad; we shrink and tremble as this twentieth century Isaiah opens the vials of his wrath upon the sexual offender.

Dazed at first, we gradually recover and laugh. For the next week we think of X at odd moments and, more or less successfully, smother our laughter, the patient whom we are examining at the moment probably thinking our diaphragmatic antics queer. The effect has been about the same as though we had heard Cole Blease deliver an address on moral philosophy.

* * * *

It is customary not to approach Baltimore without removing the shoes, or in some way signifying one's deep reverence and humility in the presence of greatness. Even the medical students at Johns Hopkins write learnedly and exhaustively upon themes to which Virchow himself could barely have done justice. You know that queer feeling that comes over you, reader, when you pick up a journal and read a title like the following: "The Psychology of Conversion in the Insane," by Mr. Philip Sydenham Lettsom, of the Senior Class, Medical School of Johns Hopkins University.

If the students are so wise, what shall we say of the residents? At the very beginning of their careers they have reached a development about equal to that of Benjamin Rush at the height of his career—no, not even excepting his wisdom. To them, "clinical medicine is a finished story," they know all that can be known about descriptive pathology, and the logical result is, they discover new diseases, devise new methods, write new books. Johns Hopkins has been launching this type of man for some years now, and it is a strange thing that medicine has not progressed faster at his hands.

As to the Olympian faculty which presides over the functions and destiny of the University, their wisdom passeth all understanding. It is said that they systematically withhold much of their knowledge for fear that its announcement would tend to paralyze effort in others—tend to intellectual pauperization, in other words—just as the man of colossal wealth has to exercise great care in his benefactions, in order that charity be not abused and the poor pauperized. Thus do they feed the medical chicks of the country within their capacity.

The professional body at Johns Hopkins is living, in point of fact, somewhere around seventy-five years ahead of actual scientific time. There is an apparently well-founded rumor that the members of this teaching body hold secret sessions at which the papers and discussions are pitched in a key which would strike any other medical men as transcendental, to say the least.

The faculty have been inclined to regard at least one professor as sensationally inclined, and have regarded as rather indiscreet deliverances his articles and addresses upon the subject of measurement of the capacity of the renal pelvis as a routine office procedure, and upon the cure by means of radium of deep-seated and extensive cancer. In the faculty's judgment these are things that the general profession is not yet prepared to receive, and thy do not consider that any purpose is served by such pronouncements other than the exploitation of the professor himself.

Great was Diana of the Ephesians, but greater is Minerva Medica of Baltimore!

* * * *

In Weissnichtwo they are making heroic efforts to maintain medical science *in statu quo*. They take the high ground that there must be no backward (nor forward) step. They are not so much concerned with progress as with the prophylaxis of decadence. Weissnichtwo is unique in its policy. The aim of its one proprietary college is to turn out superb automatoms who may be trusted to preserve the traditions and the learning and to imitate the technical methods of the founders of modern medicine. Thus is constituted a great system which has been denominated the Immediate School, its doctrine being that we must look to the perfecting of what we *have* and not strive after what *may* be. Here is a system which should elicit the admiration of all thinking medical men. It marks the introduction into modern medicine of philosophic foundations for current practice and is destined vitally to affect medicine throughout the republic, if not throughout the world. Only the superficial thinker will regard it as reactionary. This view entirely misses its true character. There is no actual embargo against change or innovations, it would not be true to say that these are really frowned upon, but the policy of the system in vogue is to ignore them.

The result is just about what would be expected: no progress, but superb imitation and utilization of standard methods.

There is a radical wing in the Immediate School, constituting a small minority, whose methods do not meet with the expressed approval of the conservative leaders. Their programme involves the application of very severe measures to men who show marked progressiveness. They are zealots, indeed fanatics, whose activities are not regarded with real favor by their milder colleagues.

Altogether too much has been made of so-called constructive, original, creative work in medicine, to the neglect of the cultivation of the old, stable, established truths. We have suffered from the same feverish spirit of individualism which seems to dominate most of our American people. The Weissnichtwo leaders have steadfastly refused to be drawn into the scientific vortex and have stood aloof, their faces turned—not to the past wholly, but mainly to the present. And who can say, after all, that this is not the best way to insure the future?

Thus is the reason made clear why Weissnichtwo, for a city of its size, has seemed to lack medical men of conspicuous scientific initiative. She has not lacked

men of scientific *attainments,* but their greatness has not been of the sort calculated to win the plaudits of the mob. These great characters have stood quietly, yet firm as the granite hills, for the great principles of the Immediate School. All honor, then, to such giants, doing today's work unmindful of the dreams and visions and strivings of the restless savants of other cities and other lands, grand in their very simplicity, imposing in their superb common sense, admirable in their mastery of conventional technic and of Immediate literature and practice. Ye heroic exemplars of conventional practice, salutations and largess be yours! Even yet shall ye receive the encomiums of an admiring profession and a grateful race.

* * * *

Do we believe in the twilight sleep?

Yep. It's fine for husbands and critical crones.

BILATERAL RENAL CALCULUS; HYPERTROPHIED PROSTATE.*

HENRY H. MORTON, M.D.,

CLINICAL PROFESSOR OF GENITO-URINARY DISEASES IN THE LONG ISLAND COLLEGE HOSPITAL; GENITO-URINARY SURGEON TO LONG ISLAND COLLEGE AND KINGS COUNTY HOSPITALS AND THE POLHEMUS MEMORIAL CLINIC, ETC.

Brooklyn, N. Y.

The first case I want to show you to-day is one you saw for a few minutes last week where I made a confession of negligence on my part, inasmuch as although I found a small stone in the bladder with the cystoscope, I overlooked the main trouble, which is a condition of bilateral renal calculus, or, in plain English, stones in both kidneys.

During the past week we have subjected this man to a careful study and have now made a diagnosis and laid out a course of treatment.

This man is 45 years of age. In April, 1913, he was operated on in another hospital by a surgeon, who did a left nephrotomy for the removal of stone. Two stones were found. In the middle of May, after having left the hospital, the patient passed seven or eight small stones per urethram. Since that time until November 7, 1914, he was free from difficulty except for an almost continuous slight dull ache across the left side of his body, anterior to the kidney wound. On the night of November 7 he passed one stone at 11 o'clock. On the same night he endeavored to urinate, but was unable to do so and was relieved by passing a catheter. He was cystoscoped the next day in our dispensary and the doctors told him he had a vesical calculus which might be crushed.

Now, with that history the first thing I did was to cystoscope him, and cystoscopy showed a small stone about as large as my finger nail, which he subsequently passed. He had difficulty for a moment in urinating and the stone came out with a gush of urine, disposing of that.

Now, you will note that he states in his history that he has passed a number of small stones through the urethra and that he has a continuous dull ache over the kidneys.

These points caused me to consider that we had not excluded a calculus pyelitis of his kidneys, and we therefore proceeded with the systematic examination to verify or exclude this condition.

We first catheterized the ureters. The findings from the ureteral catheterization are as follows:

Right urine, 15 c.c., blood and pus, urea 4¼ grains to the ounce. The left urine, 53 c.c., very watery, tinged with blood, 1⅛ grains of urea to the ounce.

This radiograph was taken and you will distinctly see four small shadows as large as a pea, showing stones scattered in the parenchyma of the kidney. We also find two more stones impacted in the lower part of the ureter. We have, then, in the left kidney four stones lying in different places, not in the pelvis of the kidney (it would make it much easier if they were located there), but lying scattered in the parenchyma of the kidney, and also two stones impacted in the lower part of the ureter.

The radiograph of the right kidney shows a mass of shadow filling up the pelvis of the kidney and going out into the calyces. It acts like a cast going off into the different compartments of the pelvis. There is no stone in the ureter on this side.

We observe, then, that we have stones in both kidneys. The right kidney, which is doing the most work, is the one with the largest stone in it, but even that with a secretion of 4¼ grains of urea to the ounce, is very much below par. We should have at least 8 to 10 grains secretion from the kidney. The other kidney has only 1⅛ grains.

The question arose as to what could be done in an operative way to relieve this man's suffering and at the same time save his life. It was a hard problem to solve. I came to the conclusion that if anything in an operative way were done we ought to take the left side first, the one which is secreting the 1⅛ grains of urea with the stones in the ureter and in the substance of the kidney.

We should have to expose the kidney, bring it out on the flank, find the four stones and take them out, for we could not remove them by a pyelotomy.

We should then have to remove the stones from the ureter by turning the patient on his back and making an incision through the abdomen above and parallel to Pouport's ligament and expose the ureter by pushing back the peritoneum. The stones could thus be removed without opening the peritoneal cavity. During the convalescence from the operation we would hope that the other kidney would be sufficiently active to support life, although with its damaged condition and low urea output we fear very much that it would not be capable of carrying the patient along after the operation. Now, supposing the man survived the operation, the left kidney which had been operated on would then be in better shape and, if in three or four weeks after the operation he were still alive, we would take out the big mass of stone from the pelvis of the right kidney. I believe that would be the way to handle the case, but the element of risk to the patient would be very great. He is an intelligent man and he is able to think for himself. I have explained the situation to him. I told him I thought his chance of recovering from the operations would be about two out of three, and if he did not die he would be relieved from his disability and would live a number of years. He gave the matter consideration for three or four days and talked it over with his friends and came to the conclusion that as he is not suffering as he had been, and as he would probably go along for two, three, four or five years as he is, he preferred to do that and enjoy the few years remaining rather than take the chances of operative procedure.

Hypertrophied Prostate.

This man is 72 years of age, although he looks a great deal older. The history is as follows:

*Clinical lecture at Long Island College Hospital, Brooklyn.

He has had no symptoms referable to his genito-urinary tract until two weeks ago when he became suddenly unable to void except a few drops at a time. Since then he has been catheterized. He came into the hospital here with continuous dribbling, 16 ounces of residual urine; prostate uniformly enlarged; upper border not palpable. A permanent catheter was placed in position and he was put on urinary antiseptics.

I want to speak on the inadvisability of fully emptying a bladder which has been distended for a long time. This man had a pint of urine in his bladder and had carried it for a considerable period. The bladder was distended. The sudden withdrawal of the pressure from the bladder is likely to throw the kidneys into a state of acute congestion, suppression of urine results and after three or four days the patient dies from acute septic anuria. In these cases the urine should be drawn off a little at a time for three or four days to a week. Even then there is a considerable amount of risk, but it is minimized as much as possible. To empty a bladder at one sitting is bad surgery. This man, however, was, fortunately, not injured by it. There was no rise of temperature and his urine kept on just about the same, but you must remember that it is bad surgery to empty the bladder at one sitting. This man has also paralysis agitans, but that would not have very much to do with his bladder condition.

We examined his prostate per rectum and found it could not be outlined. It runs up and shades off gradually and the finger keeps going up, so that we do not know where the prostate leaves off. The probabilities are there is a lobe projecting into the bladder which would call for a suprabubic prostatectomy rather than a perineal. Examination of the urine shows much epithelium, occasional granular casts, a few hyaline casts, a moderate quantity of pus, s. g., 1013, acid, and a faint trace of albumin. It is not very good urine from a prognostic point of view—granular and hyaline casts. Thalein test: First hour, 10 per cent.; second hour, 5 per cent. Cystoscopy was not done, as we want to do as little instrumentation in this particular case as possible. The urinary findings here are the main guide in a prognostic way to determine whether we should operate or not, and all of those findings say "Hands off!" particularly the thalein test. When there is only 10 per cent. of thalein in the first hour and 5 per cent. in the second it means that any operative interference with the bladder, and an anesthetic would certainly throw those kidneys into a condition of acute congestion. He would have suppression of urine and die within two or three days after the operation. Nothing in an operative way is to be considered in this case at present.

How can we build him up for an operation? He is a pretty poor subject to do anything with, but with some of these old men showing a low thalein, low specific gravity and polyuria, we can do a great deal by putting them on a diet of carbohydrates, and forcing water on them and in the course of two, three, four or six weeks of this preliminary treatment, we can clear up the polyuria, bring up the specific gravity, reduce the casts so that they do not appear and can bring the thalein up so that it will be at least 20 per cent. in the first hour. With this amount it is usually considered safe to operate as far as the kidneys are concerned.*

32 Schermerhorn St.

*The old man with hypertrophied prostate died a few days later without operation in spite of continuous drainage, the Murphy drip and free drinking of water. A prostatectomy would only have hastened his death.

INGUINAL HERNIA IN CHILDREN; PYLORIC STENOSIS AND GASTROENTEROSTOMY; TOY-PISTOL WOUND OF THE HAND.

From the Surgical Clinic of

WILLIAM FRANCIS CAMPBELL, A.B., M.D., F.A.C.S.

PROFESSOR OF SURGERY, LONG ISLAND COLLEGE HOSPITAL,

Brooklyn, N. Y.

Inguinal Hernia in Children.

History.—Patient, male, seven months old, is brought to the hospital because of an inguinoscrotal tumor. The mother says that the tumor increases in size and becomes tense when the child cries. When she lays the child on its back the lump often disappears. This condition has been observed for the past two months.

Examination.—You will note that the swelling in the right inguinal region is obvious. As the child cries and increases intraabdominal pressure the tumor becomes more prominent and tense. As I place the child on its back and exert gentle pressure over the mass the mass is reduced, and as it disappears there is a distinct gurgle.

Gurgling occurring coincident with reduction is pathognomonic of hernia.

Comment.—This is an extremely interesting condition—an inguinal hernia in a child seven months old—interesting because of the problem it presents to every practitioner to whom such cases come for advice. Shall we advise immediate operation? If not, what is the proper management of such a case? What are you going to tell the mother to do? It is time that the general practitioner treated these cases according to some definite rational plan, instead of shifting the responsibility to the truss-maker, and permitting these patients to drift into incompetent hands.

Physicians complain that the treatment of hernia patients is largely in the hands of truss-makers. This is true. It is likewise a reflection on the competency of the physician. This is as it should not be. It is the duty of the physician to prescribe, measure, fit, inspect, and supervise the patient who wears a truss, and not be content to have these duties appropriated by the truss-maker.

Responsibility has drifted to the truss-maker because he has been willing to assume what the physician has surrendered.

Treatment of Inguinal Hernia in the Child:

This is not a case for operation. The child is too young for a satisfactory radical cure, and it is possible to obtain a spontaneous cure by mechanical means.

The fundamental principle in the treatment of simple inguinal hernia is *reduction and retention*, and this principle applies whether the cure is brought about by operation or by mechanical appliances.

First, remove all causes of increased intraabdominal pressure, such as tight belly-bands, indigestion, constipation, phimosis, stone in the bladder, etc., which cause crying and straining. *Keep the hernia continously reduced by closing the hernial opening*, either by the application of a truss or by radical cure-operation.

Remember that in infants it is possible to obtain a spontaneous cure by maintaining continuous reduction. After the second year, however, the chances of cure by this method are doubtful.

Keep in mind this rule as a definite procedure on which to base your management of these cases:

Rule: *In infants apply truss continuously as soon as the hernia is diagnosed.*

After the second year consider radical operation if the nutritional index is favorable.

Let us consider, then, the treatment by truss. There are some very definite indications in this treatment which the profession has failed to grasp, and the lamentable failures of this treatment are not due so much to faulty principle as to faulty application.

More infants would be cured by the truss alone if there were more doctors who understood its intelligent application. As soon as a hernia is diagnosed in an infant apply a truss *continuously day and night.*

Remember that treatment by truss can be efficient only when the principles of the treatment are intelligently understood, and its application is in the hands of a vigilant doctor, and a careful nurse.

What are you trying to accomplish with the truss? The object of the truss is twofold—to obtain if possible a spontaneous cure, and failing in this, to carry the child safely over the first few years till a proper time can be selected for operation.

The first principle to comprehend in the mechanical treatment of hernia is that *a truss to be efficacious must be worn continuously.* Here is where the treatment falls down. There isn't one case in a hundred in which the truss is worn continuously—why? because the truss-maker doesn't care, and the nurse does not know, and the doctor dismisses the patient when he prescribes the truss.

The child who wears a truss is a patient for a doctor's care, and requires a doctor's supervision just so long as the truss is worn.

Keep in mind the object of the truss—it is to maintain reduction—to prevent the hernia from escaping into the sac, and thus bring about obliteration of the sac. Hence it is obvious that the support must be continuous, day and night, during the bath, and when the truss is changed.

From the time the truss is applied there must not be a moment when the hernial opening is left without support. Should the child cry or cough or strain during a moment when the opening is unsupported, the hernia may again protrude and spoil the results obtained by months of treatment.

Is it not obvious that the intelligent supervision of this treatment is the price of success?

The management of the truss in infants should be under the supervision of the physician, not the truss-maker. The physician should measure, select, fit, and make the first application of the truss.

The nurse should receive specific instructions in reference to the purpose of the truss: the location of the hernial opening, the proper placing of the pad, the hygiene of the truss and inguinal region, the proper support of the hernial opening by the fingers of the nurse when the truss is removed for cleansing the parts.

This instruction is as important as the ordering of the truss, for without it the truss will accomplish nothing but irritation to the infant. Furthermore, it should be understood that *when the physician prescribes a truss he does not dismiss a patient—he accepts a patient who is to receive his professional care so long as the truss is worn.*

It cannot be made too emphatic that *the cure of hernia never results from the mere application of a truss; it is the truss plus intelligent supervision.*

Again, the mechanical treatment of hernia does not imply that the treatment is to be left to a mechanic. It is more than the mere prescribing of the truss. It

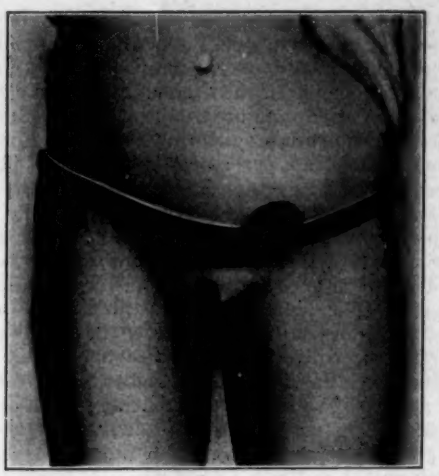

Fig. 1.—Cross-Body truss applied to left inguinal hernia (De Garmo).

implies accurate measurement for the size of the truss; definite instructions as to the type of the truss; careful shaping of the truss so that the truss conforms to the patient, not the patient to the truss.

What kind of a truss should we prescribe for this patient? Eliminate from consideration such unreliable relics as "hanks of worsted," and "folded skeins of Berlin wool"; their inefficiency is only equaled by their uncleanliness.

In selecting a truss, be sure that it is first, efficacious; second, cleanly. To be efficacious it must possess a metallic spring which can be so adjusted to the child that it conforms to the shape of the pelvis, and maintains a pressure that holds the hernia without irritating the skin. To be cleanly, it must be simple in design, waterproof throughout, so that it may be unaffected by urine, and frequently cleansed.

The type of truss which most completely fulfills these requirements is the "cross-body" truss, which essentially consists of a pad with a metallic spring surrounding two-thirds of the pelvis and supplied with a strap which completes the circumference by being buttoned to the pad. (Fig. I.)

We shall now measure this child for the truss. With the child lying on his back we find the circumference of the pelvis by holding the end of the tape at the

Fig. II.—Showing method of taking diagram with lead tape (De Garmo).

hernial protrusion which has been previously marked with ink, and passing it around the hip midway between the crest of the ilium and the great trochanter—the resulting number of inches is the size required. After the proper sized truss has been procured, it is then to be shaped so as to conform to the pelvis of the patient who wears it. No truss can be said to fit until it is properly shaped.

It must be shaped properly to hold the hernia without irritating the skin, and it should be shaped by the physician. For reproducing an accurate tracing of the conformation of the pelvis we use the simple and efficient "lead tape" method of De Garmo. (Fig. II.)

The end of the tape is placed over the hernia and extends from this point across the front of the abdomen and around the hip of the opposite side, and thence across the back. The lead tape is gently pressed to the form of the body, carefully removed, and placed edgewise upon a sheet of paper, where a tracing is now made of its inner surface with a lead pencil. (Fig. III.) Remember in shaping a truss covered with hard rubber it must be first warmed by passing the spring through an alcohol flame, otherwise the rubber will crack.

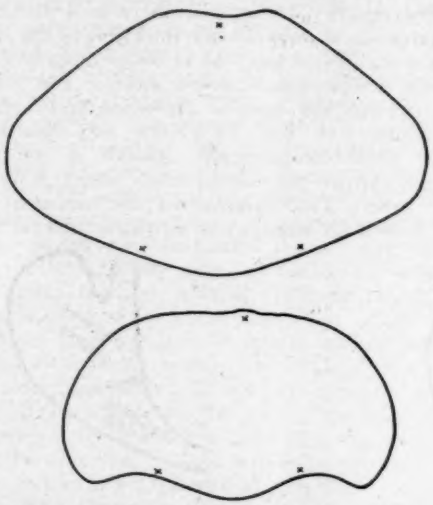

Fig. III.—Diagram of two persons whose measurements are identical. (De Garmo).

A word should be said regarding the *hygiene of the truss,* for this is very important. Since continuous pressure is the price of cure, it is evident that the skin will tolerate this treatment only with the most scrupulous cleanliness and persistent vigilance. The problem before you is to prevent excoriations of the skin constantly subjected to pressure and soiled with urine. To this end the skin must be kept clean and dry.

The best results are obtained by having two trusses used alternately. The truss is kept on while the child is being bathed; when removed for cleansing the underlying skin, the nurse is instructed to maintain pressure with the fingers over the hernial opening. The skin is now cleansed, and sponged with fifty per cent. alcohol, dusted with talcum powder, and the dry truss adjusted in place. Repeat this procedure as often as necessary to keep the skin clean and dry. Should excoriations of the skin occur apply zinc oxide ointment.

A final word as to the proper supervision of the child who wears a truss: After the truss is prescribed, fitted and shaped, and full directions given for the after care, the physician's supervision is still essential. For ***the child who wears a truss is a patient until the hernia is cured.***

One important fact must be kept in mind—the child is growing, and the truss must be changed and adjusted to meet the demands of growth. Hence the patient should be seen at regular intervals, for the mechanical treatment of hernia in children will be successful only in proportion to the careful supervision of the family physician.

What about the radical cure for children? There is only one good reason for delaying the radical cure of hernia and that is to have the nutritional index high enough to insure safety. Operation is neither safe nor satisfactory before the age of two years: the extreme thinness of the sac, the diminutive structures, and the sensitiveness to shock, all combine to make the operation in infants difficult and delicate. After the age of two years however, if the nutritional index is sufficiently high, there is no reason for continuing the truss if a spontaneous cure has not already been obtained. Operation is then indicated.

Never permit a child to wear a truss indefinitely; the truss should be abandoned after the age of two because the wearing of a truss interferes with proper exercise, and thus interferes with bodily development. The child who wears a truss is seriously handicapped in the struggle for existence.

Pyloric Stenosis and Gastroenterostomy.

History.—Patient, male, fifty-eight years old, enters the hospital because of pain in the epigastrium and excessive vomiting.

The patient enjoyed good health till five years ago when he began to have pain after eating. Patient describes it as a "boring pain." It occurred with persistent regularity about three hours after eating and radiated to the back. He usually awoke about two o'clock in the morning with pain, which was relieved by taking food. The pain is increased by drinking water. Recently he has vomited excessively and lost twenty-five pounds in weight.

Examination of stomach contents shows total acidity, 78; free hydrochloric acid, 28; occult blood, positive.

His father died of "stomach trouble" at the age of fifty-eight.

Comment.—We are justified in concluding from the history that this patient has a pyloric stenosis and from the excessive vomiting it would appear the pylorus is pretty well occluded. The patient gives a typical history of ulcer at or near the pylorus—the periodicity of the pain and its relation to the intake of food—the hyperacidity, and occult blood all point to ulcer. I am inclined to believe, however, that the ulcer has been the basis for degenerative changes, and that we are now dealing with a malignant obstruction of the pylorus. The patient's age, excessive vomiting, family history, rapid loss of weight, are rather significant of carcinoma.

Note that the patient's father died of "stomach trouble" at the age of fifty-eight. I place a good deal of weight on the family history in my cancer cases—not that anyone ever inherits cancer, but one may inherit the soil on which cancer thrives, *i. e.*, the kind of tissues which are favorable to the growth of cancer.

Operation.—We make a median incision above the umbilicus. On opening the abdomen we find the greater curvature of the stomach presenting in the wound. We will draw the stomach out through the wound for thorough inspection. Here is the pylorus. You note a blanching and curious puckering of the serous coat over the pyloric region—that means pathological changes. On palpation I find a hard, stony mass surrounding the pylorus and extending an inch and a half on either side of the ring. This is a carcinoma of the pyloric orifice

engrafted on an ulcer base. I also find the glands along the lesser curvature all involved.

What can surgery do to relieve this patient?

The patient's condition is not very good. His vital index is low. I do not believe that he will tolerate a resection of the stomach, and I am not sure that such a proceeding would be curative.

Gastroenterostomy offers the best solution of this patient's problem. It will immediately relieve his obstructive symptoms and prolong his life for a year, possibly two.

We shall make the posterior anastamosis, joining the upper portion of the jejunum with the posterior wall of the stomach as near the pylorus as expedient.

Comment on Gastroenterostomy.—A study of the gastric function in the light of modern physiology, and the modification of the function by the establishment of a new exit for the stomach contents may assist in forming a correct estimate of the real value of gastroenterostomy and the indications which justify its employment. It is fairly questionable whether gastroenterostomy can ever become an ideal operation from a functional standpoint. Its purpose is to short-circuit the upper portion of the intestinal tube so that the gastric contents pass directly into the jejunum instead of traversing the pylorus and duodenum. Is the purpose always successful and what are the causes of defeat?

First, consider the size and shape of the normal stomach. In the study of one hundred apparently normal stomachs we are convinced that there is no organ of the body that shows such variations. The vertical diameter of our specimens varied from four to fourteen inches, while the shape, though likewise variable, could be grouped according to certain types of which we shall speak later. The common conception of the shape of the stomach is that of the text-book picture; there has been too little appreciation of the great variety of form and the individual peculiarities which each case presents. It is evident that the form of the stomach cannot be demonstrated through a three or four-inch incision. The text-books represented the stomach as in Fig. IV., the lesser curvature above, the greater curvature below, and the long diameter horizontal.

The newer text-books represent the stomach as in Fig. V., the lesser curvature to the right, the greater to the left, the long diameter vertical. A composite picture of our one hundred specimens indicates that the long diameter of the stomach is slightly oblique, extending downward from left to right as in Fig. VI. It will also be noted later that this form is more nearly in accord with its structure and function.

Second. The stomach is structurally and functionally an organ with a twofold purpose. First, it is to receive the food as a reservoir; second, it is to triturate the food and prepare it for intestinal digestion. This twofold function is plainly marked in its structure, for about the middle of the body there is a distinct line of demarcation observed in the thickness of the stomach wall; above this line the wall is comparatively thin and forms the cardiac pouch; below this line and extending to the pylorus the wall is thickened and forms the pyloric tube (see Fig. VI.); not only this but the mucosa, while comparatively smooth in the cardiac pouch, is thrown into deep folds where it lines the pyloric tube. This division of the stomach into a cardiac pouch for storage and a pyloric tube for tritura-

Fig. IV.

Fig. V.

Fig. VI.

Fig. VII.

Fig. VIII.

Fig. IX.

Fig. X.

Fig. XI.

Fig. XII.

tion exactly corresponds with the twofold gastric function.

Third. While the cardiac pouch is passive, simply maintaining sufficient tonic contraction to slowly push the food into the pyloric tube, the latter is active in churning the food and mixing it with the gastric juices. This is accomplished by the peristaltic waves impelling the food toward a closed pylorus, which automatically opens at intervals to discharge small jets of chyme into the duodenum. Thus it is evident that the passive cardiac pouch and the active pyloric tube are of considerable significance in any operation which seeks to modify the gastric function. This adaptation of structure to function is well demonstrated in the types of stomach which we have observed. In Fig. VII., the cardiac pouch is large and the pyloric tube proportionately small; in Fig. VIII. the conditions are reversed, while Fig. IX represents the composite type.

In all of our specimens these two physiologically distinct regions were indicated by a slight constriction with a thickening of the muscular fibres—a sort of "circular muscle" which is probably an active factor in separating the two portions. When the "circular muscle" is highly developed a distinct constriction is found at the junction of the two regions, and there results an hour-glass type of stomach, as shown in Figs. X., XI., and XII.—a type by no means rare. Ten per cent. of our series show such constriction. The smallest constricting ring admitting the index finger. It will be recalled that this is the normal arrangement in certain rodents and other animals. Whether this is a reversion to type or a perversion of function is a matter of conjecture.

Fourth. The erroneous conception which has prevailed that the stomach empties by gravity-drainage has done much to befog the real value of gastroenterostomy. Neither the stomach nor any portion of the intestinal tube, whether through natural channels or artificial openings, is emptied by gravity-drainage. Cannon has shown that "when the body is in the upright position, and a large artificial opening connects the stomach and the intestine, water will not run out; gravity can have no effect because of the hydrostatic relations in the abdomen. In order that food may move onward through the alimentary canal, muscular contraction is necessary to create a difference of pressure."

It is evident, therefore, that gastroenterostomy is to be performed only in the presence of a demonstrable lesion or evidence of stenosis. Even in cases presenting a typical history of gastric lesion it is not wise to propose a gastroenterostomy as the only means of cure. Symptoms of severe gastric disease may often be explained by exploring the appendix and gallbladder. A gastroenterostomy must presuppose a gastric lesion and not merely gastric symptoms.

Again, the instructions to make the opening in the most dependent part of the stomach mean nothing; dependency of the aperture has no effect upon its efficiency. The aperture should be placed near the pylorus where the fluidity of the food and the mechanical pressure are greatest.

No operation upon the stomach has given such beneficent and brilliant results as the operation of gastroenterostomy, but it is not a cure-all and should be performed only in the presence of definite indications.

Toy-Pistol Wound of the Hand.

History.—Patient, boy, twelve years old, enters the hospital because of a wound of the palm of the hand inflicted by a toy pistol. A few hours ago while playing with the pistol it accidently discharged, causing this wound of the hand which I now show you. His family physician was called, and advised that the boy be sent to the hospital for further treatment. This wound does not look particularly vicious; it is a punctured wound with ragged edges, and powder marks on the skin; the family physician could easily have cleansed the wound and put on a protective dressing, and I doubt not but that it would heal by primary intention.

The doctor, however, was not misled by appearances; he realized that this is one of the most dangerous wounds which we are called upon to treat, and that unless immediate and extraordinary precautions were observed the boy might lose his life. We shall, before treating the wound, anesthetize the patient.

Comment.—What is there about this wound that is so fraught with danger? a danger out of all proportion to its apparent significance! These are the wounds, par excellence, in which tetanus develops. This wound under ordinary treatment would probably heal by primary union, but the boy is liable to develop lock-jaw and die in one of the violent spasms characteristic of the disease. Among the many causes of tetanus, the wounds made by a blank cartridge are most to be feared. The wound is a punctured wound and the wadding carries into the tissues the tetanus germs. Here are the ideal conditions for the tetanus bacillus to grow, for the bacillus is anaërobic, it cannot thrive in the absence of oxygen; in the punctured wound the bacteria are so implanted into the tissues that oxygen cannot come in contact with them. This explains the prevalence of Fourth of July tetanus. In 1903 as a result of Fourth of July injuries there were 406 deaths from tetanus as compared with 60 from all other sources; and of these 363 were due to blank cartridges.

Operation.—The patient is now ready for operation. The field of operation has been cleansed in the usual manner.

We shall first lay this wound widely open by making an incision over the point of puncture and going down to the very bottom. Here is an interesting condition: note the wadding lodged in the wound, which I now remove with the forceps. I have known of a case in which the wound healed by primary union and the wadding was extracted two weeks later after tetanus had developed. All foreign bodies having been removed we now disinfect the wound with full strength iodine, and pack the wound with gauze saturated with peroxide of hydrogen. We shall change this dressing every four hours so as to get the continued effect of the peroxide.

Why not use the actual cautery on these wounds?

These wounds should never be cauterized either with actual or potential cauterants, since by charring the surface tissue the wound is sealed over and made more inviting to the anaërobic bacilli.

Note that the wound is treated openly, and that peroxide of hydrogen is brought in contact with the tissues—all to get the inhibitory effect of oxygen.

But we have not completed our task with the toilet of the wound. There is something else fully as important and never to be omitted.

Antitetanic serum must be administered in prophylactic doses to every case in which you suspect a tetanus infection. Never *permit a wound from a toy pistol to go without antitetanic serum.*

The proper time to cure tetanus is before it develops. Here is where an ounce of prevention is worth a ton of cure. We shall, therefore, inject fifteen hundred units of serum as a preventive measure.

It has always been our practice to inject the serum so that it forms a barrier ring about the wound.

394 Clinton avenue.

The American Association of Clinical Research

James Krauss, M. D., Permanent Secretary and Editor.

This association elected the following officers at the convention in Baltimore for the year 1914-15:

President—Jefferson D. Gibson, M.D., Denver.

First Vice-President—D'l. E. S. Coleman, M.D., New York.

Second Vice-President—R. M. Griswold, M.D., Kensington, Conn.

Secretary-Treasurer—James Krauss, M.D., Boston.

Registrar—Ralph Reed, M.D., Cincinnati.

Research Committee—Three years, Philip Rice, M.D., San Francisco; two years, F. C. Askenstedt, M.D., Louisville; one year, A. R. Peebles, M.D., Boulder, Col.

Educational Committee—Three years, H. H. Biedler, M.D., Baltimore; two years, F. H. Blackmarr, M.D., Chicago; one year, H. D. Schenck, M.D., Brooklyn.

Journal Committee—Three years, L. K. Hirshberg, M.D., Baltimore; two year, E. W. Young, M.D., Seattle, Wash; one year, Alice Conklin, M.D., Chicago.

WHY THINGS ARE NOT WHAT YOU SEE THEM TO BE.

Leonard Keene Hirshberg, A.B., M.D.

President of the American Association of Clinical Research, Baltimore.

No man or woman is ever so much deceived by another as by him or herself. The girl deceived by the lover; the rube fooled by the bunco-steerer; the merchant lured by the stock market; the fat gentleman with the bank roll duped by the sweet little maid; the lobster hooked by the salamander are gulled less by the hocus-pocus, chicancery and deceit of the Salomes and Judases than by the tricks of their own thoughts.

Experimental psychology has contributed a large number of new discoveries which explain all this. Time was when philosophers, beetle browed, knitted and knotted in wrinkles, with ponderous spectacles and professorships, would sit in their garrets or hermitage and evolve some theory or notion to explain whether the world was made of green cheese, a blue fancy, or something real.

For tens and hundreds or thousands of years philosophers have fought French duels of wordy battles as to the existence of anything round about or not. To plain people, who have bumped their heads on door knobs or burned fingers in a fire, it might seem the Olympus of folly to debate whether a piece of sausage and a dog are the flames from your heated imagination or something actual and real.

But philosophers are not supposed to be either plain or matter of fact. They are apt to pursue words and phrases, no less than thoughts, into all sorts of mazes and devious channels. If they at times run into a blind alley, a cul-de-sac, or a stone wall, the matter is lightly dismissed with "we shall return to that later."

Experimental psychology takes neither philosophies, philosophers, innermost thoughts, or words seriously. This experimental science of the real world as distinct from the image or thought world may be likened to philosophy and the psychology of other years, as a man is to his reflection in a mirror.

*Read before the sixth annual meeting of the American Association of Clinical Research at Baltimore, November 5, 1914.

The one is active, movable, changeable, up and doing, while the other is merely the reflected ray of light. One is the substance, the other is the shadow. One is a creature that acts upon and is acted on by everything round about. The other is uninfluenced by or uninfluencing the world.

In fine, laboratory, experimental, objective, and the "test" psychology of to-day, takes nothing for granted, admits no "authorities" other than real facts open to, admitted and acknowledged by ninety-nine and nine-tenths per cent. of sane persons. The older psychology of psychics, spirits, mind reading, telepathy, "seeing-things," spiritism, and images and thoughts of isolated "professors," "mediums," "experts," "writers on malaria," "descendants of Oliver Wendell Holmes," and the like, are all found wanting by objective psychology.

Recently this refreshing science has undertaken to find out why everybody sees things, not as they actually and truly are, but each in a different way. It has been found for the first time that there are no such things as a pure, unadulterated, accurate, unmixed sensation.

This will be a blow to physiologists, physicians, and medical men generally, all of whom still teach that when you see a bull-dog with his teeth in the seat of a pedestrian's trousers, you really see what you think you see. Nothing else. This is a clean, uncomplicated sensation you are falsely taught.

Philosophers of a certain ilk may teach, if they like, that when a saucer of milk is lapped up by a kitten, there never was any *real* milk there in the first place. They may hold to this super-ideal world of non-reality. That is not what these experiments of psychology show.

What they do prove, however, is the fact that the eye, ear, and other sensation receivers and mouthpieces, as years advance from infancy upwards, become moulded and impressed in such a way with repeated happenings of the past in such a wise that they have a real physical power of prophesy.

Coming events cast their shadows before simply because the eye, muscles, tongue and ear are set like a mouse-trap or trigger of a gun—to wit, to spring forward far beyond the needed requirement; to foresee and forehear, to forestall what it has seen and heard so often before.

In other words, if you see an automobile, a runaway horse, or a batted ball, although each one is entirely different and describes an absolutely new and distinct kind of motion, yet you will see it exactly as you have seen many others before it.

Moreover you will see it before it happens. If you watch a home team at bat, you will see the runner beat the ball to first many times, when the unbiased, much travelled umpire calls him out. In the same way you will often see a fielder drop a ball, although it never leaves his hands.

When you meet a new acquaintance you are prone to think you have met him before or see that he "looks the spitting image of a dear friend, Mr. Blank." I, myself, wear a Van Dyke beard and an imperial moustache. There are a score of men stouter, taller, shorter, darker, lighter, and with hair on their heads—I am well-nigh bald—who do not resemble me in the slightest, yet who are constantly

told because they happen to wear beards—also unlike mine—that they look like me or I look like them.

That the ear is never true; that even Caruso, Farrar, and the best musicians cannot hear sounds as they actually are, is easily discovered experimentally; that even those with a marvelous sense of hearing, can never hear exactly what took place or what caused a particular sound, is proved in the laboratory. Little instruments that resemble brass helmets can be made to imitate bees, birds, the sighing of wind through trees, the breaking of waves on a beach, thunder, roll of drums, violins, oboes, and so on.

Various sounds are made from these "resonators" and real bees, flies, parrots, musical instruments, and noises are also used. Any series of sounds used for some days previously leaves such an impress upon the subject's ears, that subsequent tones or noises are interpreted and heard almost before they are made, in terms of the sounds previously and formerly repeated.

It is a law of nature that light travels faster than sound. You can see a puff of smoke some time before you hear the shot. You can see the batter hit the ball some seconds before you hear the crack of the bat.

Yet you will find on analysis that well known operas and songs that you hear hundreds of times a day, and other familiar and oft repeated ones are heard as quickly as you see. The experimental psychologist knows this to be another example of hearing things before they happen. This is true, scientific foresight due to habit, past experience, and multitudes of repetitions. The eye and the ear have become linked thus so often that the instant the eye sees a certain thing, the ear hears its necessarily associated sound. This fraction of a moment's anticipation or "prophesy" becomes fused with the actual sound, which comes a moment later.

Echoes are often heard double for this very reason. The sound is heard from habit and also as a later rebound. People who "see things" such as ghosts, spirits, and departed guests, have much the same experience.

Seeing halos around the head; see people before you meet them—wrongly explained as a coincidence or as something mysterious—are all due to the fact that you see the things which you have seen oftenest.

A patch of color, of light, and of shadow are usually all you see of anything. Yet you instantly recognize that distant blend as Larry Jones or Goldie Summers. Sancho Panzo, who in Cervantes "Don Quixote," charges and takes distant windmills for knights, is not a bit more amusing than the rest of humanity. Knights were in his thoughts as well as among his associates—at least in costume—hence he saw them.

There is but a slight difference between sane persons who see an orange when a yellow globular color is thrown into the air, and the drunken man who sees rats without cause or the insane one who has the delusion that the veins on his arms are wriggling worms.

Indeed the only way you recognize a friend, a book, a doorstep, a fruit, a tree, or what not, is not because of any sensation you receive at that moment, but from the past experiences, repetitions, and intimate memories of the past.

When you absentmindedly trace your steps home at night you may not be aware that past experiences are responsible for your seemingly rational behavior but you have not consciously *seen* a house number, a doorstep, a post, a tree, or any of the landmarks which are needed to guide a stranger.

A dog, a cat, or a horse is no different from you. They find their way home, not because they *see* any peculiar home signs, but because they perceive a lot of complex, conglomerate things oft associated in their cosmos with that spot. A dog perceives his master, not by smell or sight according to Professor John B. Watson of Johns Hopkins—as has been taught, but just as the master himself recognizes his children, namely, by a mixture of complex perceptions.

You turn corners, cross roads, avoid lamps as well as people, not because you *see* them, but because you perceive them. You may be talking to a companion, and at the end of your walk you may find yourself quite unable to recall a single moment when your movements were specially modified to suit an actual need, though you have probably accommodated yourself in this way many times. The frequency of past experiences of the kind has established what you have previously called a psycho-physical disposition which now works itself out on the occasion of the appropriate stimulus with the slightest intervention of consciousness. In like manner, an experienced teacher pursues the course of his lesson without any conscious effort to watch the more mischievous members of his class—yet no irregularity escapes his notice, or fails to produce a suitable, though to the casual observer scarcely noticeable, response.

In the young child, all such dispositions are in the making. His mental life is therefore necessarily bound up very closely with his actual environment, as it changes from moment to moment. If he is walking in the road he must attend to the line of the footpath, the gas lamps and the people, or disaster would attend him at every turn. Repeated experience leads him to make the necessary muscular adjustments whenever he is about to step across the line of shadow or of light which marks the change of level from road to footpath, until finally the muscular changes take place with accuracy and precision with the exercise of little, if any, conscious control, whenever the situation demands it. This leaves the mind free to pursue any line of activity without reference to normal changes going on in the immediate surroundings.

You see then, how closely the process of perception is related to that which governs the formation of habits. It is possible only because of that fundamental quality of retentiveness which leads to the formation of psycho-physical dispositions. At the same time, it must not be supposed that the development of the perceptive powers is merely a development towards automatism.

The sensory bases upon which experiences rest are so slight that it is not surprising to find error creeping in, especially when perception takes place under the influence of expectancy. Most people find themselves very unsatisfactory proof-readers. The thought and the particular phrases in which it is cast suggest the words before the eye reaches them. You tend to see what you expect to see, and miss the printer's errors. Under emotional influences, like that of fear, for example, such misinterpretations are particularly common. A nervous person walking along a country lane finds a miscreant's footsteps in the fall of every leaf; if you are waiting anxiously for a telegram, how many times do you hear the footsteps of the messenger and the pull of the door-bell! Every slight sound is the occasion of such erroneous

mental construction. It is clear, however, that illusions, which is the name given to misunderstandings of this peculiar kind, are not due to any inaccurate working of the nervous mechanism of sensation. The possibility of mistakes of the kind may perhaps be regarded as the price paid for the power which the accumulated but latent fruits of experience give to you in your perceptual adjustments. The sensory element in perception is often so entirely outweighed by those traces of the past which are involved in the process, that the actual sensory object is enormously modified or even practically replaced by something else which corresponds more closely to existing and very lively dispositions.

In both perception and illusion there is always present some sensory element and even those traces of past experience which are revealed when either process is subjected to analysis are also sensory in origin. Ultimately, then, the knowledge of the physical environment rests upon the evidence of the senses.

Everyone knows what Bunyan meant when he wrote of the "five gateways of the soul," but increasing knowledge has taught that the traditional five senses do not exhaust the list. Perhaps the most important of the more recently discovered sensations are those which are due to the movements of muscles, tendons, and joints, which play so large a part in enabling you to gain control of your movements, sensations of heat and cold, other organic sensations from internal parts of the body and sensations of pain, all of which are due to the stimulalation of nerve structures specially adapted to respond to a particular type of stimulus. A visual sensation may be more or less bright, a sound sensation more or less loud, a sensation of pressure may be more or less light and so on. These are differences in intensity. Again, visual sensations vary in color, sound sensations in pitch, temperature sensations may be hot or cold and taste sensations may be sweet or salt, sour or bitter. These are typical of what are called qualitative differences, and the student will readily notice how much more delicately these differences are related in the case of sight and sound than in the other cases.

It is particularly important that one should realize the difference between the sensation and the stimulus to which it owes its rise. Most people see sufficiently for all practical purposes, without knowing anything about vibrations of the ether or the changes which they cause in the minute structures which lie in the sensitive layer of the retina. The psychologist is not directly concerned with either of these things. It is in seeing as you all experience it that he is interested. The physicist or the physiologist tells that the other things happen and you accept his word for it, but you are not conscious of these events, they do not enter into the experience of the person who sees in the way that color and brightness and light and shade do. These, then, are the sensory objects the apprehension of which he discusses. A like distinction is also to be drawn between all other sensory objects and the stimuli to which they owe their appearance in consciousness.

Moreover, in actual experience you never merely sense color, for instance, but perceive a colored thing. The mental processes which are set up by sensory stimuli are always interpretative and therefore perceptual in character. Whenever you see, you see something. Ordinarily you can name or describe it. So with what you hear or touch or taste. But these interpretations had to be learnt, except in so far as precise reflex machinery provided for right response to such stimuli.

In general, the tendency is to shrink from those contacts which produce discomfort, and to seek those which give satisfaction. This shrinking or seeking attitude which the infant learns to adopt towards objects around him in his first interpretation of his sense experience. It represents what they mean to him; he is beginning to perceive. Conscious purpose is still undeveloped, but when he hears a voice, his head turns, seeking, as it were, the visual sensations which usually accompany that sort of sound. His mental life is at first chiefly of this order. Increase of motor control greatly enriches his sensory experiences and deepens the significance of the things around him. In other words, percepts become fuller color differences, differences in size and shape, position and distance are all perceived with gradually increasing accuracy; to sensory stimuli his reactions grow increasingly varied and delicate with these growing powers of discrimination. The process is especially rapid in regard to the things which afford him bodily comfort or with which he plays or which he otherwise puts to use. Instincts like fear and curiosity prompt experimental interpretations of new sensory experiences, but his action in these cases, even when most foolish, has its basis in what he has done previously.

In your own perception you will readily distinguish the dominant play of purpose. When you are thirsty, the cup of tea has only one aspect—a thing to take in the hand and carry to your mouth. When thirst is quenched, your china-collecting interest may assert itself, and the shape and design of the particular cup may strike your eye. If you want a certain book from your shelves, to that and that only your eye is directed. You may not even notice that other books surround it. In a casual outward glance, the unfamiliar strikes you and excites a closer examination, but commonly your interests and purposes determine your perceptions. If you are enthusiastic about birds, every twitter catches your ear as you walk through country lanes and a new note instantly arrests your attention, whilst your friend the botanist sees nothig but the flowers in the hedge bottom.

What you call observation is precisely this purposeful attention to the things which strike your senses. You do at times give yourself over to casual and almost meaningless noting of the things that pass before your eyes, as you sit in a railway train for example. But this is not observation in the right sense of the word. If, on the other hand, by force of habit, or by specific intention you are on the lookout for special features in the changing landscape, geological, historical, or other landmarks, your survey is purposeful, you become observant. Under the influence of a particular interest, your perception becomes remarkably acute. The sailor sees land on the horizon long before the passengers on his ship, and the traditional Red Indian can follow a trail through the woods which would defy the ordinary white man. Popular opinion is apt to ascribe the power of the Red Indian to special acuteness of vision, but recent researches into the psychology of savage races throw considerable doubt upon this view. It seems more

(*Continued on p.* 18)

(*Continued from p.* 34)

probable that experience, quickened by the necessities of the situation, has taught him just what to look for, and how to interpret what he sees. The same explanation is, in all probability, true of the sailor's quickness to see the coast line which may be fraught with danger, or the first sign of the nearness of home.

At the same time, the capacity for sensory discrimination may be improved by the formal training of graduated exercises. Within certain limits fixed by physiological conditions that vary with every individual, the delicacy of the ear is improved by exercises which necessitate discrimination in the pitch of musical notes. Similarly, you will find that regular practice will improve the power of "seeing" distances, or delicately adjusting your muscles to the handling of a billiard cue. But improvement in sensory discrimination goes ahead much faster when you feel that something really depends upon it. In the life of the young child, formal training has usually no place. His sensory development is a product of experience, and of his growing sense of power amongst things which every day acquire new meanings for him. He has no established interests but the objects about him have for the most part become familiar, in the first instance, as sources of pleasurable sensory activity. He has "played" with them; then he puts them to use on his own initiative and in original ways. Informally he "picks up" a great deal of practical knowledge concerning the physical properties of objects. He finds out that some things will break when they fall and others will not, that some things are hard and others soft, that he cannot carry water or milk as he carries a piece of wood, that his father's chair is heavier than his stool. He is already in the path of learning, but his experiences are disordered, and his actions are almost entirely prompted by momentary circumstances. His development will be marked by an increasing coherence in his behavior. His perceptions will come more and more into the service of purpose, gaining thereby in acuteness as well as in richness of content.

It is important to realize how relatively late the power to look at objects in an impersonal way develops. A child in the Kindergarten is interested in objects because of the part they play in his everyday life—not in their shape or color, or size, nor in their relations one to another. The ordinary child of three or four who looks at a picture still sees the persons and objects upon it in isolation. If you ask him to tell you what he saw, you will learn that there was a man, and a girl, and a horse, and so on. The pictured objects are just representations of things that have entered into his own experiences, and nothing more. At five or six he is curious to know what is going on in the picture—he is interested in other people's doings as well as his own. A year or two later he will observe more particularly the relative position of objects and suggest reasons for things—"the man is sitting down on a stool and looks very tired"—"the sun is just peeping behind the hill and the man is going out to his work." "There is a clock by the window on the wall—it says half-past five." Last of all comes the tendency to notice the details of individual objects—what they are made of, their peculiarities of form and position.

The bearing of this upon the so-called observation lessons in school is clear. Internal factors and felt needs are the springs of successful activity on the part of the children, and when you talk of training a child's power of observation, you may profitably keep in mind the possibility of cultivating his powers of purposeful action, success in which will depend upon watchfulness and care in the use of his senses. When mistakes in observation really matter, they become relatively infrequent. Many of the school observation lessons are, psychologically considered, nothing more than a formal attempt to associate names to things or to the specific sensory qualities of things. Whether they are justified or not it is not the business of psychology to say.

At the same time, the psychological qualities of a good observer include something more than interest in and knowledge of the subject under examination. Interest in a subject is not infrequently accompanied by preconceptions which may even be strong enough to vitiate the observation altogether. Until Galileo's time, people believed that a stone of ten pounds weight would fall ten times more quickly than a stone of one pound. That was the current belief, and nobody thought of questioning it. Yet the actual fall of stones must have been watched many times in the interval, but it was only with difficulty that Galileo persuaded his contemporaries to look at facts in freedom from the bias of preconception. In a like way, every teacher of science knows how difficult it is to prevent the quite honest "cooking" of results which comes when a pupil knows beforehand what he ought to find. Hence to train observation implies also a training in intellectual honesty and serves to lay the foundation of a love of truth for its own sake, which enables one to recognize facts whether or not they are in accordance with the preconceived ideas or hopes.

Genital Tuberculosis.

According to H. Cabot and J. D. Barney, Boston, in genital tuberculosis of the male the disease is usually primary in the epididymis, occasionally in the testicles and rarely in the prostate. As the organ primarily involved shows the least resistance, while that of those secondarily affected is far greater and often successful, the operation of choice is epididymotomy. The secondary foci in the testicle can be dealt with locally, while that in the prostate should be left to Nature. Operation on the prostate is a radical one and the complete removal of the process is out of the question. One is likely to stir up a hornet's nest and leave things worse than before. The foci in the testicle are generally contiguous to the epididymis and often quite limited; in rare cases they may be more extensive and call for orchidectomy.

They advise also the removal of the accessible portion of the vas, up to the brim of the true pelvis, as leaving it may complicate convalescence and give trouble. This done, after the removal of the epididymis through a two-inch incision in the scrotum, by blunt dissection with the fingers up to the external ring where the vas is seized with a clamp pushed up into the sinus, carefully avoiding the canal between the fascia and the fat, and its handle depressed so as to bring its point against the skin where it is pushed out through a half inch incision. The vas is pulled out, divided, cauterized with phenol and dropped back. They say: "The operation has seemed to us much superior to that involving a long incision through the scrotum and coverings of the inguinal canal in order to remove an equal amount of the vas. It takes less time in the doing, is equally efficient and shortens the convalescence about two-thirds."—(*J. A. M. A.*)